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of the AMERICAN PHARMACEUTICAL ASSOCIATION

JUNE 1959

Practical Pharmacy Edition

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Journal
of the **AMERICAN PHARMACEUTICAL ASSOCIATION**

Practical Pharmacy Edition

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American Pharmaceutical Association

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This Journal is the official monthly publication of the AMERICAN PHARMACEUTICAL ASSOCIATION, dedicated to the elevation and unification of the profession of Pharmacy through communication of authoritative scientific, professional, and cultural information. It is devoted to the education of pharmaceutical practitioners, and it functions as the professional voice of Pharmacy, which is directed to all members of the profession of Pharmacy in education, government, industry, and professional practice.

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(12) If "yes" give Particulars:.....

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Date Signature of Applicant

Although men in increasing numbers are invading the predominantly women's field of volunteer hospital service, the Veterans Administration says men are especially needed as volunteers to visit the 111,000 veteran patients and to help find jobs and foster homes for them.

The National Advisory Committee on Radiation has recommended that the Public Health Service assume all responsibility for the public health aspects of radiation and for its control as a health hazard.

The reproductive organs of Americans received two and one-half times the world's average external radiation dose plus the same amount of internal radiation for a total of 50 "sunshine units," during the last 30 years, an amount approaching the maximum level of 67 units. If nuclear testing is continued indefinitely, some portions of the U.S. population will receive 80 units, according to testimony before the Joint Committee on Atomic Energy.

All of the talented youth of this nation, including the 200,000 brightest boys and girls who drop out of high school before graduation or fail to go on to college each year, must be identified and developed to the fullest potential through proper motivation, to combat Russia's mass production of trained men and women with the objective of achieving world scientific, engineering, and professional supremacy for the USSR, Admiral H. G. Rickover keeps emphasizing.

The future of the United States is in the hands of those who probe the mysteries of the atom, the cell, and the stars, says Dr. James P. Killian, Jr., Special Assistant to the President for Science and Technology, and yet only 1 out of every 10,000 of our population is engaged in basic research, and only a very small number of the scientists engaged in seeking new knowledge are found in the fields of health, the most important area of all.

Half of the 10,000,000 additional workers this country will need by 1965 to produce the goods and services needed for a population expected to reach 193,000,000 just 6 years from now will have to be women because of the shortage of men, states Bertha S. Adkins, Under Secretary of Health, Education, and Welfare.

Surgeon General Leroy E. Burney of the Public Health Service has just issued a reminder that smallpox vaccination continues to be important for everyone in the country. He said: "A recent outbreak in Germany is new evidence of the continuing threat of the disease to this country. Smallpox vaccination is especially urgent for all persons planning foreign travel, for those who provide services in international travel and commerce, and for personnel in hospitals and health services."

Last Minute News

By 1970, more than 70,000 white males out of every 100,000 born can expect to reach the age of 65.

Some three-fourths of the strontium-90 fallout that causes so much concern is traced to Soviet nuclear bomb tests.

During the last 12 years, about 150 children, most of them 3 to 6 years of age, have died from suffocation in abandoned refrigerators. Several dozen children have also died recently through suffocation while playing with plastic laundry covers used on cleaned garments.

Overpopulation problems are accentuating the controversy over birth control.

According to the Health Information Foundation, 69% of all U.S. families now have at least one member protected by some form of voluntary health insurance and 43% of the population 65 and older now have such insurance, an increase of almost 40% in the last 5 years.

The National Pest Control Association estimates that a single pair of house flies can produce 191,000,000,000,000,000,000,000,000 offspring in one summer.

Recent studies show that monkeys are affected by subliminal perception known to advertisers as the "secret sell."

In a recent study of servicemen infected with gonorrhea, injections of penicillin failed 20% of the time, indicating developing resistance to the antibiotic by the causative organism. Isolation, recently, of the penicillin base may lead to synthesis of new penicillins which will combat this situation.

Only 10 to 20 snake bites per year prove fatal in the United States although as many as 3,000 persons are bitten by snakes annually, estimated Drs. Thomas McCreary and Harold Wurzel of the Hospital of the University of Pennsylvania.

A handkerchief containing a permanently affixed antibacterial agent which inhibits the growth of many bacteria, including those that cause odor, has been introduced.

It is not uncommon for persons drinking upwards of one quart of milk daily to develop renal stones as a result of hypercalcemia.

One form of complete mental deterioration during the first year of life, called phenylpyruvic oligophrenia, is caused by inability of an infant to metabolize phenylalanine, according to a recent report from the National Institute of Mental Health.

The pharmaceutical industry has been destroying millions of units of polio vaccine for fear of deterioration because the public has not taken advantage of the immunizing vaccine available although there was much more paralytic polio during 1958 than in 1957 in the U.S.

Scientists from Toronto, Canada, report that royal jelly can completely suppress tumor development in mice.

Poliomyelitis, influenza, and hepatitis cases are slowly climbing. During the first 11 weeks of 1959, there were 6,195 cases of liver-damaging hepatitis compared with 3,576 during this period last year.

The World Health Organization has compiled figures which show that the mortality from illness in the U.S., excepting senility and causes unknown, was actually slightly lower than the mortality from accidents and violence.

General Nathan Twining and Arthur Godfrey are just two of the 31,000 persons in this country who will be stricken with lung cancer this year, a disease linked to smoking.

During this summer, some 1,000,000 persons in the U.S. and Canada will suffer from the painful effects of poison ivy and poison sumac, according to an article in Therapeutic Notes.

The garden bonfire is a major source of benzpyrene, a cancer-producing substance.

Increasing incidence of shortsightedness among children is attributed to looking at television, according to a well-known ophthalmologist.

Recent research indicates that "tooth banks" may supply living replacement for missing teeth within 5 years.

Recent tests at the National Institutes of Health show that the use of drugs in infants or expectant mothers is dangerous for the child because certain protective enzyme systems are still undeveloped.

Radiation is the primary cause of cancer, according to Dr. Chauncey D. Leake, President of AAAS, speaking at a Rho Chi meeting in Indianapolis.

Because more than 1,000 deaths due to anaphylactic shock resulting from penicillin injections have been recorded in the last decade, many physicians are recommending that an identification card or locket similar to that carried by diabetics be carried by everyone who is sensitive to penicillin.

By 1965, about 120,000 more college teachers will be needed, according to Bertha S. Adkins, Under Secretary, Health, Education, and Welfare.

About 20% of the adult population in the U.S. is 10% or more overweight, and 7% is actually obese according to a study by Parke, Davis & Company.

More than 1,100 U.S. hospitals were doing research in 1958, and more than 160 had research programs in excess of $100,000.

For the first time, the Food and Drug Administration has authorized the use of an antibiotic (chlorotetracycline) to aid in keeping fresh-caught fish in sound condition.

Over 200 large teletherapy machines using radiocobalt to expose tumors to radiation from a distance have been built to supplement other types of cancer therapy.

Mothers given X-ray treatment while carrying unborn girl babies may have daughters who cannot themselves bear children.

Mosquitoes are less interested in humans who stop eating bananas.

The National Clearing House for Poison Control Centers, Washington, D.C., reports 500 child deaths and 600,000 nonfatal poisonings of children annually, with 90% of all poisoning cases involving children and 86% of the cases under 5 years of age.

Tens of thousands of mentally ill patients in our Nation today are receiving disgracefully inadequate care and treatment, according to Dr. Arthur S. Flemming, Secretary of Health, Education, and Welfare.

In the age group 15 to 24 years, more than 7,000,000 fatal and nonfatal accidents occur annually, and some 17,000,000 children under 15 are injured in accidents every year.

A woman in New York has apparently recovered from leukemia (cancer of the blood), perhaps because of some factor in a donor's blood.

The mechanism by means of which at least one anticancer drug is effective in the body involves an enzyme.

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News and Notes

Associations

Alpha Zeta Omega has announced that its highest award, the AZO Achievement Medal, will be given to APhA Past President *Dr. Robert L. Swain*. Some of the past recipients of the Award are *Dr. Ivor Griffith, U.S. Senator Hubert H. Humphrey, Dr. Robert A. Hardt, George H. Frates,* and *John J. Toohy*. Dr. Swain, who has served as Editor-in-Chief of *Drug Topics* since 1939, was the 1940 Remington Medalist and the 1958 winner of the Henry Hurd Rusby Award. He is Past President of American Foundation for Pharmaceutical Education and of the National Association of Boards of Pharmacy. Also, he is a former secretary of the Maryland State Board of Pharmacy and has served as Chairman of the Board of Trustees of the U.S. Pharmacopoeia since 1945. The Achievement Medal will be presented to Dr. Swain at AZO's Annual Convention in Miami Beach on July 13.

Ben Koby, President of the Kentucky State Pharmaceutical Association, is the recipient of the AZO Louisville Chapter Man of the Year Award, given annually to "that man in the profession who has contributed his utmost toward the progress and the betterment of Pharmacy in the State of Kentucky." Presentation of the Award was made recently in Louisville.

American Academy of Political and Social Science held its 63rd Annual Meeting in Philadelphia on April 10–11. The American Pharmaceutical Association was represented by *Deans Linwood Tice* (Philadelphia College of Pharmacy and Science) and *Joseph B. Sprowls* (Temple University School of Pharmacy).

American Foundation for Pharmaceutical Education has announced the awarding of $133,000 for graduate Fellowships for 1959–60.

American Heart Association—"The Prevention of Obesity" was the subject of a symposium held in New York City on May 26. Theme of the session, attended by leading heart specialists, nutritionists, dieticians, and research scientists, was "An ounce prevented is better than a pound cured."

Deafness Research Foundation has announced initial grants of $13,240 for basic research in hearing and deafness.

ARIZONA PHARMACEUTICAL ASSOCIATION 1959–60 officers. Front row (l to r): Jack Knowles, 1st Vice Pres.; O. E. Gordon, 2nd Vice Pres.; Thomas J. Moore, Treas.; Sam Reich, member of Exec. Com.; and Alfred J. Duncan, Exec. Sec. Standing in back row are Exec. Com. members (l to r); Milburn Dierdorf, Chauncey R. McCrary, Charles Pulido, Glen Hoopes, Tom Cady, J. Robert Jensen, and O. T. Fountain. Earl Melby, newly elected Pres., and Don Alspach, member of Exec. Com., are not present.

District of Columbia Pharmaceutical Association will hold its annual convention at the Hotel Shelburne in Atlantic City June 24–26. The City of Washington Branch of the APhA will meet jointly with the Association on June 24.

History of Science Society has announced the establishment of a $500 annual award to be given to an American scholar for a distinguished contribution on a topic related to the history of science. Made possible by Chas. Pfizer & Co., Inc., the prize is to be called the Pfizer Award, and the intent of it, according to *Dr. Henry Guerlac*, President of the Society, is to supplement the Sarton Medal, "necessarily. . . . limited to men and women who have spent many years in the study and advancement of the history of science . . ." and the Schuman Prize, "by definition confined to relatively young persons."

Minnesota Pharmaceutical Association—Ted F. Maier of Winona was the recipient of the Association's top annual award. The "Bowl of Hygeia" Award, contributed by A. H. Robins Company, was presented to Mr. Maier, outgoing President of the Association, for outstanding community service.

New Mexico Pharmaceutical Association—*Dr. Louis J. Fischl*, APhA President, was the main speaker at the 30th Annual Convention held in Albuquerque April 13–15.

Pharmacopeia of the United States of America—A conference on providing standards for the class of therapeutic devices known as orthopedic implants was held on May 12 in New York City.

Rocky Mountain Regional Conference on Aging, sponsored by the AMA in cooperation with medical associations of the States, was held on May 8–10 in Salt Lake City. The APhA was represented by *John B. Heinz*, Past President and present member of the Council. Addressing the final session of the Conference, the first of its kind ever held in this country, *Dr. Louis M. Orr*, AMA President-elect, presented the view that a person at 65 has before him years of creativity and activity, provided he is given opportunity to remain productive.

Society of Cosmetic Chemists—The New York Chapter held a special meeting sponsored by Geigy Chemical Corporation at its Ardsley, N.Y. plant on May 6. The principal address was given by *Dr. Stephen Rothman*, Professor and Head of the Section of Dermatology of the Department of Medicine of the University of Chicago, who spoke on "The Medical Viewpoint of the Use of Drugs in Cosmetics."

Texas State Board of Pharmacy—*Joe H. Arnette* is the new Secretary of the Board, and the office of the Board

has been moved to 914 Littlefield Building, Austin.

World Health Organization held its Second National Conference on World Health May 7–9 at the Hotel Statler-Hilton, Washington, D.C. Among the many interesting features of the program was the panel session on "World Health for World Peace" on Friday morning, May 8. The panel consisted of:

Dr. Howard A. Rusk, Director, N.Y. University-Bellevue Medical Center Institute of Physical Medicine & Rehabilitation, Chairman; *the Hon. Lister Hill*, U.S. Senator from Alabama; *the Hon. Hubert H. Humphrey*, U.S. Senator from Minnesota; *the Hon. Waller H. Judd*, M.D., U.S. Representative from Minnesota; *the Hon. Richard L. Neuberger*, U.S. Senator from Oregon; *Dr. Thomas Parran*, Pres., The Avalon Foundation; *John T. Connor*, Pres., Merck & Co., Inc.; *John J. Powers, Jr.*, Pres., Pfizer International; *Leo Cherne*, Executive Director, Research Institute of America; and *P. C. Spencer*, Chairman of the Board, Sinclair Oil Corporation.

Colleges

Alabama Polytechnic Institute—*Dean Lynn S. Blake*, who has guided the School of Pharmacy for 46 years and will retire on June 30, was honored with a banquet of appreciation on April 14, at which a portrait of the Dean given to API was unveiled and a check for $2,500 was presented to him by friends and well-wishers. Dean Blake went to Auburn in 1913 after receiving his pharmacy degrees at the University of Michigan. At that time, pharmacy was a 2-year course; in 1960, the 5-year course becomes effective. Dean Blake is listed in *Who's Who in America*, *Who's Who in American Education*, and *American Men of Science*.

Brooklyn College of Pharmacy held its Sixth Annual Health Forum in April under the chairmanship of *Professor Abraham Kreiser*. *Dr. W. Paul Briggs*, Executive Secretary of American Foundation for Pharmaceutical Education, presided over the first session, and *R. Blayne McCurry*, President of SchenLabs Pharmaceuticals, presided at the second session. Among the outstanding addresses were:

"Pharmaceuticals in Mental Health" by *Dr. Nathan S. Kline*, Director of Research, Rockland State Hospital; "The Use of Anticoagulants in the Treatment of Diseases of the Heart and Blood Vessels" by *Dr. Irving S. Wright*, Professor of Clinical Medicine at Cornell University Medical College and Past President of the American Heart Association; "Extending Pharmacy Service" by *Robert C. Bogash*, Director of the Pharmacy Department, Lenox Hill Hospital and ASHP President; "Bonanzas Don't Come in Bunches" by *Edward Beckwith, Jr.*, President, Crookes-Barnes Laboratories; "The Prescription Customer and My Store" by *Harold W. Pratt*, Director, Professional Services, Walgreen Drug Stores; and "The Pharmacist—a Vital Cog in Public Health" by *Jerome Trichter*, Assistant Commissioner, New York City Department of Health.

Dr. E. L. Hammond, Dean, University of Miss. School of Pharm., reading century-old prescription in Lederle Laboratories Apothecary Shop to Tour Guide Sandra Covert during tour of Lederle's 600-acre plant.

Dr. Hugo H. Schaefer, Dean Emeritus of Brooklyn College of Pharmacy, spoke on "Regulations Governing Prescriptions" at a recent joint meeting of the Co-ordinating Council of the Five Medical Societies and the Pharmaceutical Council of Greater New York. At the request of physicians present, it was recommended that Dr. Schaefer's summary be distributed to the medical profession.

A new 16-story residence hall now under construction on Long Island University's Brooklyn campus will be ready for use beginning with the Fall term. The building will provide rooms for both men and women students and apartments for married students.

Duquesne University School of Pharmacy—*Dr. Eric W. Martin*, Editor of THIS JOURNAL and of *Remington's Practice of Pharmacy*, gave the Hugh C. Muldoon Memorial Lecture on May 6, speaking on "Murder-Medical Quackery." The Lecture was sponsored by Alpha Beta Chapter of Rho Chi Society.

Ferris Institute—The Pharmacy Division held its Sixth Annual Pharmacy Seminar on May 13. Some of the important talks were:

"What's Right with Pharmacy" by *George C. Straayer*, Director, Professional and Trade Relations, Schering Corp.; "Employer-Employee Relationships" by *Thomas D. Baima*, Assistant Director of Personnel, Walgreen Drug Stores; "Oral Anti-diabetes Therapy" by *Ray M. Royle* Head, Promotion Copy and Research, Upjohn Company; "Recent Advances in Antibiotic Therapy" by *Dr. J. E. Gajewski*, Department of Clinical Investigation, Parke, Davis and Company; and "New Adventures in Pharmacy" by *Dr. Louis C. Zopf*, Dean, College of Pharmacy, University of Iowa.

The afternoon session of the Seminar included a Symposium on the Psychotherapeutic Drugs by the Ferris Pharmacy Faculty.

Fordham University—"Mental Health" was the subject of the Annual Symposium held on May 5 by the College of Pharmacy's Beta Xi Chapter of Rho Chi.

Montana State University—The School of Pharmacy has begun a statewide program of new student recruitment with the mailing of packets of career guidance information to all pharmacies in the state that have indicated a desire to use them. A gratifying response has been reported.

Oregon State College—*Dr. Leo A. Sciuchetti* of the Pharmacognosy Department of the School of Pharmacy has received a special grant of $5,580 to conduct an "Undergraduate Research Participation Program" in the sciences. The grant was made by the National Science Foundation, and the objective is to determine whether providing superior undergraduate students with an experience in research participation under the direction of college faculty members can make an important contribution to science education.

Rutgers, the State University—*Dr. John L. Voigt*, Director of Pharma-

Attending Greater Philadelphia Hospital Pharmacists' Assn. 20th Anniv. Banquet held recently in Philadelphia are (l to r): Dr. Joseph B. Sprowls, Dean, Temple Univ. School of Pharmacy; Dr. Linwood F. Tice, Assoc. Dean, Phila. Col. of Pharm. & Science; Mrs. Mildred C. McKibbin, formerly Director of Pharmacy Service, Pennsylvania Hospital; Dr. Quintus Hoch, formerly Director, Pharmacy Service, St. Christopher's Hospital for Children; Dr. Madeline H. McDonnell, Editor, American Professional Pharmacist; Dr. Joseph D'Ambola, Assn. Pres.; and ASHP Pres. Robert Bogash.

PHARMACY EDUCATION–INDUSTRY FORUM Operating Committee mapping out curriculum for Princeton, N.J. Forum to be held August 23–26 under sponsorship of NPC and AACP. Seated (l to r): Dr. Robert V. Evanson, Purdue Univ. School of Pharm.; Richard L. Hull, SKF Labs; Dr. William S. Apple, Asst. Sec., APhA; Carl K. Raiser, NPC Pres.; Com. Chm. Geo. S. Squibb, E. R. Squibb & Sons; Dr. H. G. Hewitt, AACP Exec. Com. Chm.; Dr. Joseph H. Kern, Northeast La. State Col. School of Pharm.; and Dr. Joseph D. McEvilla, Univ. of Pittsburgh School of Pharm. Standing (l to r): James H. Luther, Jr., Winthrop Labs; John F. Bradley, NPC Law Com. Chm.; Chas. C. Rabe, J. B. Roerig & Co.; Newell Stewart, NPC Exec. Vice Pres.; Dr. Stephen Wilson, Dean, Wayne Univ. Col. of Pharm.; D. T. Meredith, Upjohn Co.; Wilbur E. Powers, NPC Sec.; Raymond I. Dauphinais, Univ. of Conn. School of Pharm; and R. George Kedersha, Rutgers Univ. Col. of Pharm.

ceutical Extension Service, had a display of stock prescription packages of the 300 drugs most commonly prescribed by the medical profession in New Jersey at the New Jersey State Medical Society Convention held in Atlantic City on April 25. The display is believed to be among the first such educational exhibits by a pharmacy college at a state medical society convention, according to Rutgers.

St. John's University—The College of Pharmacy has been awarded a $5,000 grant by Smith Kline & French Foundation to purchase equipment for the Pharmacology Laboratory of the new $4,000,000 Science-Pharmacy Building.

Two members of the faculty of the College of Pharmacy, *Dr. Henry Eisen and Dr. John J. Sciarra*, have been awarded grants to conduct summer research, according to *Dr. Daniel M. Lilly*, Chairman of St. John's Scientific Research Board. Dr. Sciarra has been particularly active in the pharmaceutical application of aerosols, while Dr. Eisen is a specialist in pharmaceutical chemistry.

Dr. Lloyd C. Miller, Director of Revision of the United States Pharmacopeia, spoke recently at a Rho Chi Society meeting held at the College of Pharmacy on "New Features of the U.S.P. XVI."

Southern College of Pharmacy has announced the addition of a Freshman class this Fall. This year of general college work will be in addition to the 3 years of professional work in pharmacy regularly offered at the College and will create approximately 60 new openings for qualified high school graduates, according to *Dr. Olver Littlejohn*, Dean of the College. Applications are now being accepted from students to fill these openings, as well as applications from students who have completed their first year elsewhere.

Temple University—Three hundred alumni and friends of the School of Pharmacy attended a Testimonial Dinner for *Dr. Frank H. Eby*, who will complete 40 years of service to the School of Pharmacy in June. The dinner was sponsored by the Pharmacy Alumni Association and proved to be an outstanding affair.

The Beta Omega Chapter of Kappa Psi Fraternity at Temple sponsored a polio immunization program in April, the second in a series which the Fraternity has provided as a public service this year.

The Beta Lambda Chapter of Rho Chi Society at Temple presented a Convocation Program at the School of Pharmacy on May 13. Principal speaker was *Dr. Charles J. Kern*, Vice President of Wyeth Laboratories.

University of Cincinnatti—The $15,000 Joseph Schneider Instrument Room of the College of Pharmacy was formally opened on May 24. The room houses instruments used primarily in pharmaceutical research, according to the University. *Dr. Joseph F. Kowalewski*, Dean of the College of Pharmacy, presided at the dedication ceremony.

University of Connecticut–Seven new members were initiated recently into membership in Alpha Gamma Chapter of Rho Chi Pharmacy Honor Society at the School of Pharmacy.

University of Houston—Beta Omicron Chapter of Rho Chi Society at the College of Pharmacy held its first annual initiation banquet on May 2 on the University Campus.

The junior and senior students of the College of Pharmacy were guests of Abbott Laboratories in Chicago and of Upjohn Company in Kalamazoo May 9–15.

Miss Martha Jane Jones, Assistant Professor in Pharmacy Administration of the University, has been invited by Walgreen Drug Stores to participate in its 1959 Seminar in Pharmacy Administration to be held at Walgreen's Chicago headquarters June 15–26. The Seminar will be attended by deans and professors in pharmacy administration from 15 of the Nations' leading colleges and universities.

University of Michigan—A grant of $322,000 to the College of Pharmacy has been approved by the National Institute of Health for construction of a pharmacy research building. The grant is the largest given by NIH to any pharmacy school, according to U-M, and will make possible the first building at any university devoted entirely to pharmaceutical research.

The University's community health study of Tecumseh, Mich., has been assured continuance by a 5-year grant-in-aid from NIH. Begun in 1956, the study is an intensive survey of the general health picture of a single community.

Dr. Richard A. Deno, Professor of Pharmacognosy in the University of Michigan College of Pharmacy, has accepted an educational exchange appointment from the U.S. State Department to serve as visiting Professor of Pharmacy at the University of Costa Rica this summer, U-M has announced. Dr. Deno will work with the staff of the School of Pharmacy in a study of the pharmaceutical educational program at the Central American university.

University of North Carolina—The School of Pharmacy observed its Annual Awards Night on May 12, with 15 pharmacy students receiving awards.

University of Pittsburgh—Scientists at the School of Pharmacy have begun a study to evaluate the effect of certain drugs on mental activity and animal behavior, Pitt has announced. The study is being sponsored by a $41,467 3-year grant from the National Institute of Mental Health and is being directed by *Dr. Joseph P. Buckley*, Professor of Pharmacology. *Dr. William J. Kinnard, Jr.*, Assistant Professor of Pharmacology, will conduct the behavioral aspects of the project.

University of Texas—The College of Pharmacy faculty honored *J. H.*

Continued on page 302

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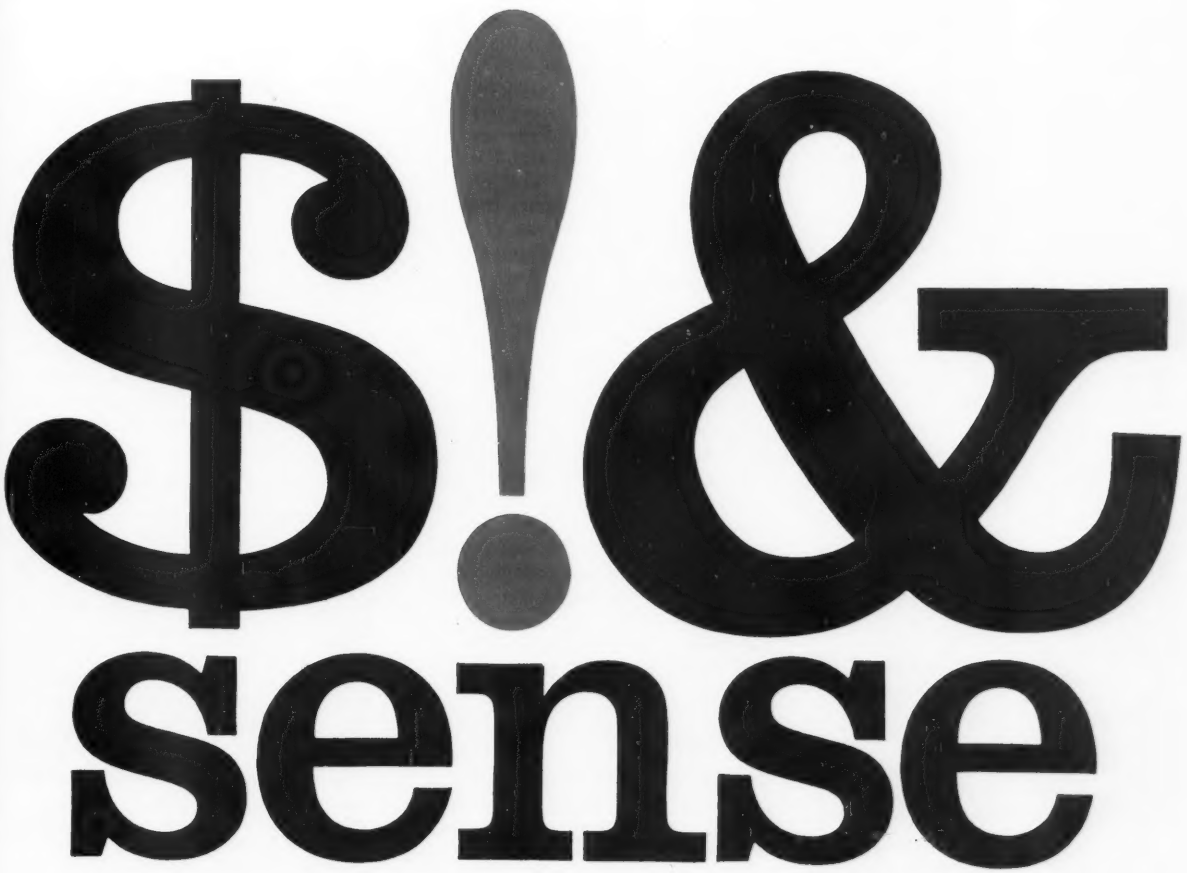


News and Notes

Continued from page 300

Arnette at a reception and dinner in recognition of his 5 years of service as Director of the Pharmacy Extension Service. Mr. Arnette resigned his position as of May 11 to become Secretary of the Texas State Board of Pharmacy.

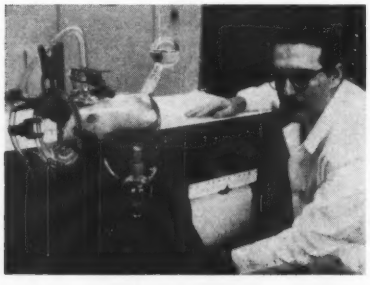
The Second Annual Visiting Lecturerer Series of the College of Pharmacy of the University of Texas was concluded on May 12–13 by *Dr. Rudolph H. Blythe*, Director of Pharmaceutical Research at Smith Kline & French Laboratories. Dr. Blythe discussed the "Educational Requirements of the Pharmaceutical Scientist Trained for Industry."

Government

American National Red Cross—Means to improve services to meet the changing needs of the American people, with the accent on service by the Nation's youth, was considered by the more than 4,000 delegates attending the 34th National Red Cross Convention in Atlantic City June 1–3. Featured speakers included *E. Roland Harriman*, Red Cross Chairman; *General Alfred M. Gruenther*, Red Cross President; *the Hon. Arthur S. Flemming*, U.S. Secretary of Health, Education, and Welfare; *Dr. Howard A. Rusk*, Director, New York University-Bellevue Medical Center, and others.

To help meet the need for trained instructors in swimming, life-saving, small craft operation, and first aid, the American Red Cross is conducting 25 10-day aquatic schools throughout the Nation this summer, the first of which was held on May 27.

Armed Forces—The National Academy of Sciences-National Research Council has announced the organization of the Armed Forces-National Research Council Committee on Bio-Astronautics. The Committee will advise the Armed Forces, upon request, in any matter concerning the biological or medical aspects of space exploration.



A recording respirometer that helps scientists screen new compounds for potential antidiabetic effects is operated in the radiochemistry department of Eli Lilly and Company by Ross E. Crabtree.

Wilbur J. Boortz (r) received the A. H. Robins Award for Community Service in Pharmacy during 1958 at the recent 80th Annual Convention of the Iowa Pharm. Assn. in Des Moines. Presenting the Award is C. E. Morton, Divisional Sales Manager for Robins.

Food and Drug Administration—The new Detroit headquarters building, located at 1560 East Jefferson, is the first district office opened in 25 years by the FDA and the first office ever especially designed for FDA work. Assisting in the dedication ceremonies on May 14 was *Arthur S. Flemming*, Secretary of Health, Education, and Welfare. This fine building is splendidly equipped for laboratory work for detection of food and drug adulterations and is particularly significant because it bears a plaque dedicating it to *George Potter Larrick*, Commissioner of Food and Drugs.

Charles G. Durbin, V.M.D., has been appointed Veterinary Medical Director of FDA's Bureau of Medicine, *John L. Harvey*, Deputy Commissioner of Food and Drugs has announced. Dr. Durbin succeeds the late *Dr. John H. Collins*.

Narcotics Bureau—*Harry J. Anslinger*, U.S. Commissioner of Narcotics, was presented on May 2 with an American University Alumni Recognition Award, the University has announced. Mr. Anslinger's scroll reads: "For effective service to his country as consul, as its representative at many conferences of international importance, and for the past 29 years as U.S. Commissioner of Narcotics, have earned him distinction and gratitude. His enemies are the enemies of humanity."

Hospital

Highland Hospital, Oakdale, Calif.—*Mathilde Herby*, new hospital pharmacist for Highland, is a wife and mother who took 12 years away from her career to raise her family. Mrs. Herby has just completed a term as President of the Northern California Society of Hospital Pharmacists and two years as Secretary of the Northern California Branch of the APhA. "I think my family has rather enjoyed my job, "Mrs. Herby said. "They find my work unusual and are quite interested in it."

John Gaston Hospital, Memphis, Tenn.—*Charles A. Champion*, hospital pharmacist at Gaston, recently spoke at many high schools in Memphis on "The Scope of Pharmacy," illustrating his lectures with booklets on Pharmacy as a career.

Michigan Society of Hospital Pharmacists—*I. Thomas Reamer* of Durham, N.C. has been named the 1959 recipient of the Harvey A.K. Whitney Lecture Award for outstanding contributions to American Hospital Pharmacy, the Society has announced. Presentation of the Award will be made on August 17 in Cincinnati in conjunction with the Annual ASHP Meeting and the APhA Convention.

Industry

Eaton Laboratories—*L. Eugene Daily, M.D.*, Norwich Pharmacal Company Vice President in charge of its Eaton Laboratories division, has been named a member of the Department of Defense Advisory panel on medical sciences. Dr. Daily is the only representative of the pharmaceutical industry among the 21 civilian consultants, according to Eaton, appointed to the panel which will provide advice on research, development and engineering aspects of the defense program in aviation medicine, atomic medicine, psychiatry, and other pertinent medical sciences.

Hoffman-LaRoche, Inc.—*Dr. John A. Aeschlimann* has been promoted to Vice President in charge of Research, the Corporation has announced. Also, *S. Evert Svenson, M.D.*, has been promoted to Medical Director.

Continued on page 306

Paul Daniel, Ford's Drug Store, Orange, N.J., APhA member, sets up his new Rx Products Department in line with Ketchum, Inc.'s new Rx Automatic Shipment Program. He is using Pharmindex, a new pharmaceutical reference service.

NEW

1 mg. STELAZINE* TABLETS

brand of trifluoperazine

THE FIRST STRENGTH OF
'STELAZINE' AVAILABLE FOR USE
IN EVERYDAY PRACTICE

Enthusiastically accepted for hospital treatment of mental illness, 'Stelazine' is now available in a new 1 mg. tablet for use in everyday practice. With this new strength, heavy S.K.F. promotion to all physicians begins, and 'Stelazine' assumes its place as the newest member of the S.K.F. family of psychopharmaceuticals.

Here are three special advantages which give 'Stelazine' an exceptional market potential:

1. 'Stelazine' is specific for anxiety, particularly when expressed as apathy, listlessness and emotional fatigue.
2. 'Stelazine' has been proved effective where other agents have failed. It often restores normal drive and creates an alert, more confident outlook.
3. 'Stelazine' also relieves the worry, tension and anxiety that may cause or complicate a wide range of organic illnesses.

Available: 'Stelazine' Tablets, 1 mg.–in bottles of 50 and 500.
Heavy prescription demand for the 1 mg. tablet will develop rapidly. Stock this new strength immediately.

Also available, primarily for use in psychiatry:
'Stelazine' Tablets, 2 mg., 5 mg. and 10 mg.–in bottles of 50.
'Stelazine' Injection, 10 cc. multiple dose vials (2 mg./cc.)–in single vials.

Smith Kline & French Laboratories, Philadelphia

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the first oral antifungal antibiotic for ringworm

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News and Notes

Continued from Page 302

Johnson & Johnson International has named *A. Rohlfing* as Vice President and member of its Board of Directors, *Robert J. Dixon*, Board Chairman and President has announced. Mr. Rohlfing leaves the post of President of Johnson & Johnson do Brasil, a company he helped to establish and over which he has served as President since 1945.

Mr. Rohlfing

S. B. Pennick & Company recently announced the following appointments:

Barclay E. Mackinnon, formerly Vice President of the New York Quinine & Chemical Works, has been appointed Vice President of S. B. Penick & Company in charge of the new NYQ Chemical Division.

Harold A. Meyer, Vice President, is now in charge of the Botanical & Allied Products Division, with *William W. Bell*, Vice President, as Assistant Manager.

Frank Seeland, Vice President, continues as Manager of the newly named Farm Chemical & Insecticide Division.

Rudy P. Neptun, formerly Vice President of the N.Y. Quinine & Chemical Works, has been appointed Vice President of S. B. Penick & Co.

William A. Thawley, former Sales Manager of N.Y. Quinine & Chemical Works, has been appointed Director of Sales Coordination for the entire Penick organization.

James J. Verde, formerly Assistant Sales Manager of N.Y. Quinine & Chemical Works, has been appointed Sales Manager of the NYQ Chemical Division.

Considerable discussion resulted from a talk entitled "Research from the Peddler's Perch" given by William A. Thawley, Director, Sales Coordination Department, recently to the Research Group of National Drug Company in Philadelphia.

Chas. Pfizer & Co., Inc. has announced the election of *John F. Duffy* as Treasurer and the appointment of *John R. Marshall, Jr.*, as Assistant Treasurer.

Pfizer International—the Election of *Conrad G. Hurlimann* as Administrative Vice President has been announced by *John J. Powers, Jr.*, President and Chairman of the Board.

Pitman-Moore Company—*John R. Jewett* has been named Vice President, Assistant to the President, according to *K. F. Valentine*, President.

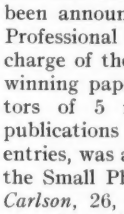
A. H. Robbins Company has announced the following promotions: *C. B. "Bill" Howell* has become Sales Manager, and *L. M. "Larry" Wright* has become Director of Special Services. Both men are resistered pharmacists.

Technical Administrator

PH.D. seeks administrative position. Majors: pharmacy, organic, biochemistry. Broad technical and professional background with numerous contacts in drug and other health fields. Experience in consulting, research, writing, technical book publishing, college teaching.

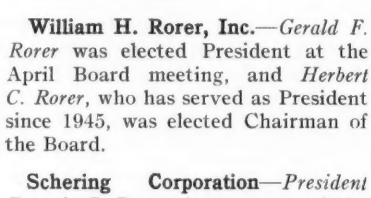
Address Box 6591, American Institute of Pharmacy, 2215 Constitution Ave., N.W., Washington 7, D.C.

J. B. Roerig and Company—Prize winners in Roerig's Second Annual Pharmaceutical Economics Essay Contest were 3 senior pharmacy students from the Universities of Minnesota, Washington, and Florida and 3 juniors from St. Louis College of Pharmacy and Fordham and Columbia Universities, it has been announced by *Charles C. Rabe*, Professional Relations Manager, in charge of the contest. Best of the 6 winning papers, as rated by the editors of 5 national pharmaceutical publications judging the contest entries, was an essay on "Training for the Small Pharmacy" by *Richard D. Carlson*, 26, of Robbinsdale, Minnesota, for which he won $500 in addition to the $250 awarded him as first prize in the senior entry category. Second prize of $150 was won by *Venda Holt*, scholarship senior at University of Washington College of Pharmacy, mother of 2, who also won grand prize in last year's essay contest. Mrs. Holt wrote on "A Student Views the Pharmacy Recruitment Problem."


Mr. Carlson

William H. Rorer, Inc.—*Gerald F. Rorer* was elected President at the April Board meeting, and *Herbert C. Rorer*, who has served as President since 1945, was elected Chairman of the Board.

Schering Corporation—*President Francis C. Brown* has announced the election by the Board of Directors of the following: *Irving H. Jurow* (right), former Secretary and General Counsel, and *W. H. Conzen* (c), former Manager of its International Division, as Vice Presidents; and *Richard J. Bennett* (l), formerly Assistant Secretary, as Secretary.



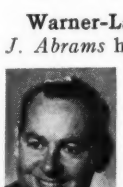
Schieffelin & Co.—The appointment of *Dr. John N. McDonnell* as General Manager of the Pharmaceutical Laboratories Division has been announced by *William J. Schieffelin, III*, Vice President. Before joining Schieffelin, Dr. McDonnell was for 14 years Vice President of Schering Corporation. He will be responsible as well for Schieffelin's research activities in the fields of ophthalmic, dermatologic, and diagnostic agents and for the marketing of the Almay line of hypo-allergenic cosmetics.

Dr. McDonnell

G. D. Searle & Co. has announced the appointment of *William L. Searle* as Director of Medical Service. Mr. Searle's great-grandfather, *Gideon D. Searle*, founded the organization 71 years ago.

President John G. Searle has announced the following promotions: *Kenyon D. Bowes* has been elected Vice President and Treasurer; *Dr. John A. Purinton, Jr.*, has been elected Vice President in charge of production; and *Daniel C. Searle* has been appointed Assistant to the President in addition to his duties as Secretary.

Warner-Lambert Division—*George J. Abrams* has been appointed President and chief executive officer of a newly formed Cosmetics and Toiletries Division, according to *Alfred E. Driscoll*, President. Before joining Warner-Lambert, Mr. Abrams was Advertising Vice President for Revlon, Inc. He will have responsibility for Warner-Lambert's Richard Hudnut, DuBarry, and Sportsman lines.


Mr. Abrams

Pierre A. de Tarnowsky has been appointed Vice President for Consumer Product Divisions, and *E. Lloyd Bernegger* has been appointed President of the Warner-Lambert Products Division, Mr. Driscoll has announced.

Warren-Teed Products Company—At a recent meeting of the Board of Directors, the following officers were elected: *R. S. Warren*, President; *J. R. Warren*, Vice President in Charge of Sales and Secretary; and *R. D. Workman*, Executive Vice President and Treasurer.

Branch News

Local Branches

Indianapolis Branch—The April and May meetings were Ladies' Nights, the first with *Morton Wolman*, President of the Indianapolis Retail Druggists' Associations, who presented a program on "Cosmetics and Fragrances," introducing *Penny Canellis*, of Lanvin, who talked on "Perfumes" and *Audrey Lamber*, of Revlon, who discussed "Color and Makeup."

The May meeting was a banquet and installation of newly elected officers, held in cooperation with Butler University College of Pharmacy's Seminar on Modern Pharmacy, with guest speaker *Robert J. Kryter*, prominent scientific engineer, talking on his recent trip to Central America, and illustrating his address with slides.

Officers elected for 1959–60 are: *Kenneth M. Wood*, President; *Paul A. Delbauve*, President-elect; *John M. Woodside, Jr.*, Vice President; and *Fred C. Hecker*, Secretary-Treasurer.

Northern California Branch—*Dr. Vincent Gardner*, faculty member of the University of California School of Pharmacy, served as moderator to a panel entitled "Where Is Pharmacy Going?" which was composed of students *Ron Allsman, Harry Avilla, Robert Rouse*, and *Joan Lilly*. This was part of a new branch program to promote attendance of Pharmacy students at dinner meetings by inviting them to take active part in discussions.

Northwestern Branch—*James Alexander* was re-elected President of this Branch, with *Paul G. Grussing* as Vice President, and *L. R. Marfield* as Secretary-Treasurer.

Northwestern Ohio Branch—As the season's final program, and in joint meeting with the Student Branch of the University of Toledo, members heard *James D. Cope* speak on "The Status of Fair Trade." Mr. Cope is Executive Secretary of the Ohio State Pharmaceutical Association. After his address he discussed pending legislation in Columbus of importance to Pharmacy. A social hour followed.

Officers elected for 1959 are: *Joseph Judis*, President; *Ralph Heuerman*, Vice President; *Beverly Wisniewski*, Treasurer; and *Emma Arvan*, Secretary.

Philadelphia Branch—*Dr. Bryce Douglas*, Senior Chemist of Smith Kline & French Laboratories, spoke at the April meeting on "The Malaya Peninsula," emphasizing his theme of crude drug production and pharmaceutical education at the University of Malaya in Singapore with colored slides.

Max Miller, Secretary of the Pennsylvania Pharmaceutical Association, spoke on "Organized Pharmacy and You" on May 14. *President Earl A. Kimes*, presided at both meetings.

BROOKLYN COLLEGES OF PHARMACY's final school-term meeting had as guest speaker, APhA Asst. Sec. Dr. William S. Apple, who spoke on "Advantages of Membership in the APhA." L to r: Dean A. G. Zupko, Dr. Apple, and Prof. Lyman D. Fonda, Faculty Adviser.

Officers elected for 1959–60 are: *Dr. William L. Madison*, President; *William H. Helfand*, Vice President; *Dr. Joseph V. Swintosky*, Secretary; and *Dr. Thomas J. Macek*, Treasurer.

Student Branches

Alabama Polytechnic Institute—Officers elected for 1959–60 are: *Edward O. Duke*, President; *Patricia E. Moore*, Vice President; *Judy L. Strong*, Secretary; and *Celia K. Nickel*, Treasurer.

Brooklyn College of Pharmacy—Officers elected for 1958–59 are: *Richard Jacaruso*, President; *Rael Welt*, Secretary; *Sam Chin* and *Martin Goldman*, Vice Presidents; *Dr. Lyman D. Fonda*, Treasurer and Faculty Adviser.

At the annual "Awards Day," April 29, the following APhA Student Members were awarded Dean's Certificates of Merit, with additional prizes as indicated: *Richard Jacaruso*, APhA President, Modern Drug Encyclopedia; *Marvin Margolies*, APhA Vice President, Merck Manual; *Stuart Saffron*, APhA Secretary, Merck Index; *Martin Goldman*, APhA Vice President; and Executive Council Members *David Farber, Edward Geller, Joseph Tomaselli, Sam Chin*, and *Lawrence Chackrin*.

Butler University—*Dimitrius Gerdan*, Director of Engineering, General Motors, narrated a lecture on the "Engineer of the Future" with slides and reviewed problems of putting a man into space, especially in regard to drug therapy, at a recent meeting.

Officers elected for 1959–60 are: *William J. Skinner*, President; *William Shaffer*, Vice President; *Robert Childress*, Secretary; and *Werner Seidler*, Treasurer.

Creighton University—Officers elected for 1959 are: *Melvin Thompson*, President; *Donald R. Kern*, Vice President; *Wayne D. Fickes*, Secretary; and *Joanne Dwyer*, Treasurer.

District VI—Loyola and Xavier Universities acted as hosts for the 2nd annual convention of APhA Student Branches, which compose District VI, on April 17–18, at New Orleans.

Sessions were held at Loyola, while open house and a tour of the city were sponsored by Xavier. Two banquets were arranged, one at each university, with principal guest speakers *Dr. Alton Ochsner*, a prominent New Orleans physician, and *Drs. Edward J. Ireland*, Dean of Loyola's College of Pharmacy, and *L. F. Ferring*, Dean of Xavier University College of Pharmacy.

The following officers were elected for District VI: *Joseph Biando*, Houston College of Pharmacy, President; *Edward Leatherman*, Northeast Louisiana State University, Vice President; *Glenn Lonhart*, St. Louis College of Pharmacy, Secretary-Treasurer; and Dr. *Frank L. Mercer*, Faculty Adviser, St. Louis College of Pharmacy. Sixty delegates attended from 6 states. Participating schools of this District are St. Louis and University of Houston Colleges of Pharmacy, Texas Southern, Northeast Louisiana State, Loyola, Xavier, and Universities of Arkansas, Kansas, Oklahoma, and Texas, 7 of which were represented.

Duquesne University—Seniors taking part as speakers on "Poison Control" at the term's concluding meeting were *Mary Jo Reilly, Lester J. Rokisky, George J. Sertick*, and *Anthony T. Dren*. A short film "The Antidote" was also shown.

The following have been nominated for Rho Chi Fraternity: *William Campbell, Lester J. Rokisky, Loretta Gemperle, Lawrence Grieco, Patricia Potesta, James Resko, Sister M. Antonia Rozman*, S.S.J., *Jeanne Stibrik, Thomas Wolfert*, and *Matthew Burns*.

Officers elected for 1959–60 are: *Thomas L. Wolfert*, President; *Garrett W. Swensen*, Vice President; *Evelyn C. Kantorczyk*, Recording Secretary; *Sister M. Antonia Rozman*, S.S.J., Corresponding Secretary; and *Marlayna J. Farulli*, Treasurer.

Fordham University—At the two final meetings of the year *Anthony L. Palladino*, President of the New York Board of Pharmacy, spoke on "How the Board of Pharmacy Functions," and a film "Dangers of Drug Addiction," was shown.

At the latter meeting, May 12, officers for 1959–60 were elected as follows: *Christopher A. Rodowskas*, President; *Thomas A. Spagnola*, Vice President; *Rose L. Serrago*, Secretary (re-elected); and *Carl J. Malanga*, Treasurer. The outgoing officers expressed hearty appreciation to their Faculty Adviser, Dr. L. N. Elowe, and members of the Branch for their whole-hearted cooperation.

Continued on page 308

Student Branches

Continued from page 307

Loyola University—The annual banquet honoring graduating students was held in the L'Enfant Boulevard Room, New Orleans, May 2.

Officers elected for 1959–60 are: *Kenneth P. Ducote*, President; *Larry Boihem*, Vice President; *Ronald S. Vinet*, Recording Secretary; *Rene L. Landry*, Corresponding Secretary; *Edward G. Ackal*, Treasurer; *James F. McCune*, Historian; *Robert Drouilhet*, Parliamentarian.

Montana State University—Officers elected in April for the coming year are: *Ben C. Tempel*, President; *Georgia Mae Hurd*, Vice President; *Marcia Peterson*, Secretary; *Mary Ryan*, Treasurer.

Northeast Louisiana State College—Officers elected for 1959–60 are: *Larry W. Seal*, President; *Joseph Frazier Gaar*, Vice President; *Barbara M. Breland*, Secretary; *Wilfred R. Ramirez, Jr.*, Treasurer; *Dr. Joseph H. Kern*, Faculty Adviser. *Dr. Cecil P. Headlee*, outgoing Faculty Adviser, was presented with a gift by Branch President *Lynn Meredith*.

Ohio Northern University—Officers elected for 1959–60 are: *Larry Heller*, President; *Llynn A. Lloyd*, Vice President; *Janet Kuhn*, Secretary; and *Al Magalmick*, Treasurer. The 5th annual APhA banquet was held May 14. Guest of honor was *Dr. Anna Koffler*, Doctor of Pharmacognosy at the University. Guest speaker was *Dr. Heber Youngken, Sr.* Outgoing Pres. *William Factor* presided.

St. John's University—Students of this branch recently heard *Dr. Theodore G. Klumpp*, President of Winthrop Laboratories, speak on "Socialized Medicine as Opposed to Drug Research."

Southwestern—*Paul F. Parker*, Dir. of APhA-ASHP Div. of Hospital Pharmacy, was guest speaker at the annual dinner dance April 16, his address entitled "Pharmacists with Visions." *Dean W. D. Strother* presented awards to the following: *Frances Babb, Wynona Berry, Orvil L. Brummett, John Benjamin Coober, Stuart B. Halley, Jr., Guthrie Hite, Clifford Meece, Dixie Shears, Jerry* and *Wilfred Smith, Novaline Umber*, and *Dan W. Woods*. Dan Woods, outgoing APhA Student President, served as toastmaster.

Officers elected for 1959–60 are: *Carroll Halsted*, President; *Dub Denny*, Vice President; *Earl J. Buckmaster*, Secretary; *S. Ray Johnson*, Treasurer; and *Tany Talbot Brown*, Historian. *Dr. Charles Schwartz* continues as Faculty Adviser.

Washington State College—*David D. Stiles*, Director of Market Development for Abbott Labs., talked on "What's New in the Prescription Market" recently.

West Virginia University—Officers elected for 1959–60 are: *Donald Gene Miller*, President; *David Walter Miller*, Vice President; *Linda Jane Stucky*, Secretary-Treasurer.

Xavier University—Officers elected for 1959–60 are: *Charles Collins*, President; *Barney Davis, Jr.*, Vice President; *Betty J. McQuay*, Secretary; *John Freeman*, Treasurer; and *Beverly Ann Bouligny*, Reporter.

NORTHERN NEW JERSEY BRANCH Pres. Goodsell F. Waters welcomes George Griffenhagen, Curator, Med. Sciences Sect., Smithsonian Inst., Washington, D.C., at the year's last meeting, as Michael Iannarone, Sec.-Treas. (l), William Fink, 1st. Vice Pres. (ctr), and Mrs. Florence Frick, 2nd Vice Pres. (r) await their turn to extend greetings. Mr. Griffenhagen spoke on "A Tour of Pharmacy Through the Ages."

University of Arizona—*Edward Lincoln*, student member, spoke on his adventures on a trip to the Upper Amazon recently, demonstrating various primitive articles received in trade.

Henry Winship, Ola Wells, Melta Lou Henderson, Herb Meshel, and *James Knox* were appointed by *President Bob Marder* as Special Committee for reviewing the branch constitution in order to have amendment recommendations ready for the first meeting in September 1959.

June graduates were guests of honor at a May banquet given in Phoenix by the Arizona Pharmaceutical Association.

University of Arkansas—*Joe Bowen*, senior, of Jonesboro and *Lester Hosto*, junior, of Little Rock have received scholarship awards of $250 each, from the Meyer Bros. Drug Company of Little Rock. The winning essays were entitled "Pharmacy and the Dispensing Physician" and "To Be Ethical," respectively.

University of Connecticut—Officers recently elected for 1960 are: *Harold Kadish*, President; *Charles Miller*, Vice President; *Andre St. Germain*, Treasurer; *Robert Miller*, Recording Secretary, and *Suzanne Cagner*, Corresponding Secretary.

University of Iowa—At the last meeting of the term a film "Clinical Manifestations of Drug Addiction," loaned by the USPHS Hospital of Lexington, Ky., and narrated by *David Carew*, Iowa University staff member, was shown.

Officers nominated for 1959–60 are: *Richard Watkins, Robert Straw, James Cunningham, Carl Highenboten, Sylvia Patterson, Katherine Lee*, and *James Weakly*. *Charles Holmes, Charles Castor*, and *Jan Evans* will serve as Special Committee members.

University of Florida—Officers elected for 1959–60 are *Everett A. Kelly*, President; *Robert T. Showerman*, Vice President; *Angel D. Protos*, Secretary; *Gilbert N. Weise*, Treasurer; *Louis Adams*, Reporter; and *Jerry Elaine Neudorfer*, Parliamentarian. Plans are being completed for a presentation of a Pharmacy Open House at the coming 14th annual Engineer's Fair, and for the Senior Banquet program.

University of Georgia—*Dr. Seldon D. Feurt*, former Faculty Adviser and Assistant Dean of the School of Pharmacy, was voted outstanding Professor of Pharmacy for 1958 by his students, before he left to assume the post of Dean of the Pharmacy School of the University of Tennessee.

Student members assisted in the recent city-wide fund drive for Hope Haven School for Retarded Children, of Athens. *Dr. Herman Otto* talked on the treatment of mental ills with drugs at the March meeting.

University of Maryland—*Dr. Sylvan Shane*, anestheologist, spoke on "Impressions of Jet Travel to the Soviet Union," with slides illustrating his points, at one of the term's last meetings.

Officers elected for 1959–60 are: *Samuel Lichter*, President; *Henry J. Glick*, Vice President; *Nancy L. Gibbon*, Secretary; *Dr. Frank J. Slama*, Treasurer (re-elected).

University of Mississippi—The film "Hydrocortisone," produced by Upjohn Company, was shown at the last meeting of the school term, May 5.

University of North Carolina—At the annual awards banquet April 11 *Dean E. A. Brecht* presented awards to the following students: *John M. Lazurus; Donald J. Deator, Virginia Carswell, Carl V. Christensen, Thomas Yost, David Lee, William Russell Griffen, Lula Sue Ballintine, Kenneth L. Lawling, Jane Page, Edward J. Smithwick, M. L. Jacobs*, and *Barbara J. Bell*.

University of South Carolina—Officers for 1959–60 were installed at a banquet held April 24, at the Wade Hampton Hotel, Columbia, S.C. Guests of honor were the senior students.

University of Tennessee—Members heard *Paul F. Parker*, Director, APhA-ASHP Division of Hospital Pharmacy, speak on April 15, his address entitled "Pharmacists with Visions."

University of Texas—The Longhorn Pharmaceutical Association, of this University's College of Pharmacy, which includes student branches of APhA and Texas Pharmaceutical Association, has announced the establishment of a merit award to be given annually in recognition of service rendered to the College of Pharmacy or to Pharmacy in Texas. The first award will be presented at the meeting of the Pharmacy Alumni Association at the convention of the Texas Pharmaceutical Association in Forth Worth on July 27–29.

University of Washington—Officers elected the first of April for 1959–60 are: *Leonard Burda*, President; *Gene A. Lakey*, Vice President; *Mrs. Mary G. Colamarino*, Secretary; *Karen S. Leigh*, Treasurer; *Lois L. Moe*, Senior Class Representative.

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Current Comment

Continuing Education

As part of its continuing education program, the University of California School of Pharmacy and University Extension presented a review of autonomic drugs over a 6-weeks period, April 6–May 11

The program chairman was Dr. Donald C. Brodie, Professor of Pharmacy, University of California School of Pharmacy. The lecturers were Dr. Eugene C. Jorgensen, Assistant Professor of Chemistry and Pharmaceutical Chemistry, University of California School of Pharmacy, and Dr. Frederick H. Meyers, Associate Professor of Pharmacology and Assistant Clinical Professor of Medicine, University of California School of Medicine. The fee for this evening series of postgraduate lectures for pharmacists was $15.

Employment in Pharmacy

According to "An Open Letter to the College Graduates of 1959" from Secretary of Labor James P. Mitchell:

> Most of the nearly 4,000 pharmacy graduates this year will find employment readily; about 3 out of every 4 will be needed to fill vacancies which arise as pharmacists retire or leave the profession for other reasons. While employers will generally be able to meet their needs for pharmacists with the bachelor's degree, not enough people with graduate training in pharmacy and related fields will be available for laboratory research positions and college teaching.

Teachers' Seminar

The 36th Annual Plant Science Seminar will be held in conjunction with the Second Teachers' Seminar on Pharmacognosy, August 7–10, at the University of Illinois College of Pharmacy. At the annual Plant Science Seminar banquet to be held at 6:30 the evening of Saturday, August 8, the Annual Edwin L. Newcomb Memorial Awards in Pharmacognosy (American Foundation for Pharmaceutical Education) will be presented by Dr. H. W. Youngken, Sr., Chairman of the Awards Committee.

The Teachers' Seminar on Pharmacognosy will be held on August 9–13. The illustrious faculty contains many names well known in Pharmacy: Dr. Jack L. Beal, Dr. Willis R. Brewer, Dr. W. Paul Briggs, Paul D. Carpenter, Dr. Edward P. Claus, Dr. Frank A. Crane, Dr. Richard A. Deno, Dr. Marin S. Dunn, Dr. James E. Dusenberry, G. M. Fosler, Dr. N. L. Gage, Dr. Melvin R. Gibson, Dr. Gunnar Gjerstad, Dr. Melvin W. Green, Dr. Harold G. Hewitt, Dr. Adelbert Knevel, Dr. H. E. Longenecker, Dr. Edward P. Offutt, Dr. Lloyd M. Parks, Dr. Ara G. Paul, Dr. D. Perlman, Dr. Maynard W. Quimby, Dr. Egil Ramstad, Dr. Arthur E. Schwarting, Dr. Stephen K. Sim, Dr. Daniel P. N. Tsao, Dr. Varro E. Tyler, Jr., Dr. Ralph F. Voigt, Dr. George L. Webster, Edson F. Woodward, Dr. Heber W. Youngken, Jr., Dr. Heber W. Youngken, Sr., and Dr. Louis C. Zopf.

Biological Warfare Agent?

Molds such as those which cause athlete's foot were formerly harmless when injected into the body. Now, however, by means of a new process these molds can be converted into new types of diseases against which no known remedy is available.

When certain molds are placed in small cellophane bags and then surgically implanted into body cavities, the molds gradually change their shape and in approximately 20 days assume a completely new form and character. When the new mold is injected into rabbits and mice, a severe infection results which destroys the animals' internal organs. By repeated passage through one animal after another, the disease becomes progressively worse.

Assessing Tranquilizers

In a paper entitled "How to Assess the Tranquilizers," Dr. M. G. Martin, Director, Monroe Wing, Regina General Hospital, Regina, Saskatchewan, emphasizes, in his discussion of clinical research, that

> The pharmacist should hold the key to double blind studies. In addition, he should appreciate that the tablets must be identical in all respects. This means matching of the new drug and the placebo tablets with respect to packing, appearance (size, shape, and color), taste, dosage instructions, and labelling. The new drug and the placebo should be labelled with the patient's number after the random assignment rather than with the letter A or B or some such designation.

Telling Pharmacy's Story

The Pharmaceutical Society of the State of New York has just launched a newspaper program designed to tell Pharmacy's story to the public. Each month the Society will service its local associations with prepared newspaper mats. The program will cover such subjects as the average family's prescription costs, vitamins as medicines, the importance of an up-to-date medicine cabinet, the meaning of the Rx prescription symbol, the caution that must be used in purchasing potent drugs, and the responsibility of the pharmacist to public health.

Local pharmacists are purchasing newspaper space for the ads on a cooperative basis. Executive Secretary Nicholas S. Gesoalde pointed out that it was undertaken by the Society because a professionally planned and prepared advertising project of this sort would be much too costly for local groups to conduct on their own. With the N.Y. State Society assuming the responsibility and costs, the local associations are able to use their funds for the purchase of local newspaper space.

Mission to Moscow

The U.S. Public Health Service has just issued *The Report of the U.S. Public Health Mission to the Union of Soviet Socialist Republics* (PHS Pub. No. 649). This document contains the findings of a mission of 5 physicians who visited the USSR late in 1957 under the exchange program approved by the two countries.

The 5-man Mission consisted of Dr. Thomas Parran, Chairman, former Surgeon General of the U.S. Public Health Service (1936–1948), now President and Trustee of the Avalon Foundation, New York, N.Y.; Dr. Otis L. Anderson, Assistant Surgeon General for Personnel and Training, Public Health Service; Dr. Henry van Zile Hyde, Assistant to the Surgeon General for International Health, Public Health Service; Dr. Malcolm Merrill, California State Director of Public Health; and Dr. Leonid S. Snegireff, Associate Professor of Cancer Control, Harvard School of Public Health.

Members of the Mission travelled 8,500 miles and visited 61 institutions in 9 cities of 5 of the Soviet Republics during the period Aug. 13–Sept. 14, 1957.

They found that the problem of medical care in the Soviet Union has been "tackled with great vigor." There is a high ratio of physicians, and many hospitals have been built.

Pestilential diseases and the diseases of filth have been substantially brought under control. Malaria as a significant health problem is on the way to eradication. Venereal disease has been mastered but tuberculosis remains a plague.

Baby Tooth Survey

The importance of making an immediate collection of baby teeth lies in the fact that teeth now being shed by children represent an irreplaceable source of scientific information about the absorption of radioactive strontium-90 in the body. The Greater St. Louis Citizens' Committee for Nuclear Information is therefore collecting teeth through the mail at the rate of 50,000 per year. Parents are asked to provide data on the age of the teeth and the feeding of the children from which they came.

Editorial

Pharmacy Rejuvenated

Pharmacists across the United States will be vitally interested in the plight of one of their fellow practitioners and how he overcame unfortunate and unforseen circumstances with amazing fortitude.

A Well-known Story

Typical of pharmacists with long established businesses in center city areas was Barnett Russell Greene, who long operated his own drug store at 11th and Poplar Streets in Philadelphia. Nearly half a century ago when he opened the pharmacy and began compounding prescriptions and dispensing drugs, the neighborhood contained many fine, "modern" shops. Also rows of neatly kept, spick-and-span homes added a fresh appearance to the busy streets.

Then came the fast-stepping, wild and woolly, dissolute days of the prohibition era followed by the stock market crash of 1929 and the Big Depression. The once respectable neighborhood was infiltrated by gangsters and prostitutes. Gambling dens and speak-easies flourished. The impoverished area around 11th and Poplar became one of the worst slum areas to be found anywhere. It never recovered from the series of business failures and foreclosures of the early 30's.

Dreary Squalor

Like all of the 174 metropolitan areas of this country, Philadelphia has been faced in recent decades with central decay as the streets grew too narrow to handle the congested traffic, the wealthier families moved out to the more attractive environment of the suburbs, the lower income groups moved in to take their places, and the city core became a blighted, unkempt, dilapidated series of slum areas. Such decaying, musty regions, now dotted across the fast-growing Nation with its rapidly shifting population, present challenging problems to city planners everywhere.

But the owner of Greene's Drug Store doggedly held on until his death in 1946. This pharmacy was something he had built, and he had a lot of loyal customers. Barnett Greene was not going to leave for anything in spite of the squalor. His widow Celia also kept the drug store going after his death with the help of a hired pharmacist to fill prescriptions. She held on with a grim tenacity, a determination to persist, at least until her son Robert could take charge.

Youth Takes Over

Eventually in 1947, just a year after his father's death, Robert Greene received his cherished sheepskin from the Philadelphia College of Pharmacy and Science. And, like his father before him, he did not want to relocate either. After receiving his license to practice his profession, he decided to continue serving the same old customers. But he had the vigor of youth—he decided to expand. In 1953 he even bought out one of his competitors, Nathan Lippman, who was retiring from his business just a block away.

At about that time Robert Greene also began attending neighborhood meetings of the Philadelphia Redevelopment Authority. As the groundwork was being laid for demolition of the old buildings to make way for a modern shopping center, he sought and received permission to become a redeveloper. The Authority paid him $17,000 for his building, then sold him a plot 90 feet × 100 feet just north of it for $9,900. Meanwhile, Greene continued doing business while the rest of the block was being razed. For the privilege of occupying his old building until his new one is ready, he will pay the cost of demolishing it—about $1,800.

The Goal Achieved

Greene's interest in the neighborhood and his persistence paid off. Last month, on Wednesday, May 27, Robert Greene staged ground-breaking ceremonies for the North Allen Medical Center as one means of expressing his gratitude for the cooperation he has received from the Philadelphia Redevelopment Authority.

Invitations were sent out to Mayor Richardson Dilworth and members of his cabinet, Council President H. J. Tate and his fellow councilmen, Development Coordinator William L. Rafsky, Executive Director Francis J. Lammer of the Redevelopment Authority, and Federal urban renewal officials. After the ground-breaking, Greene invited them all to lunch at 2601 Parkway and the children of the neighborhood received popsicles.

By strange coincidence, his wife Dorothy Greene was sworn in the same evening as President of the Ladies Auxiliary of the Philadelphia Retail Druggists Association, but she was on hand for the ground-breaking and luncheon in spite of her excitement over her own big affair.

The Center, the first commercial structure built with the aid of the Authority, will contain Green's brand new pharmacy and four doctors' offices. Pharmacist Greene, President of the Center, will rent the offices to the physicians.

The modern steel, concrete, and glass structure, although in reality it is only a small one-story building, will be a powerful and lasting symbol of what can be accomplished by persistent and continuous action directed toward a worthwhile goal.

Eric W. Martin

Straight from Headquarters

Robert P. Fischelis, Secretary

William S. Apple,
Assistant Secretary

APhA Comment on Warning Statements for Drug Labels

It was indicated in our Bulletin No. 59-7, which was circulated to the entire membership of the ASSOCIATION, and in the editorial headed "Warning Statements for Drug Labels" on page 192 of the April issue of THIS JOURNAL that the proposed warning statements circulated by the Federal Food and Drug Administration would be reviewed and that a statement would be filed embodying the views of the AMERICAN PHARMACEUTICAL ASSOCIATION on the subject.

The following statement was filed with the Hearing Clerk of the Department of Health, Education, and Welfare on May 25, 1959.

*Statement of the American Pharmaceutical Association**

It has been noted that the purpose of issuing warning and cautionary statements for inclusion in the label or labeling of drugs and devices, subject to Section 502 (d) and (f) (2) and the relevant provisions of the Federal Food, Drug, and Cosmetic Act, is to assist industry in preparing proper labeling for these articles for over-the-counter sale and in meeting the legal requirements of the Act that the label or labeling of drugs and devices bear adequate warnings, in such manner and form as is necessary for the protection of users.

Members of the AMERICAN PHARMACEUTICAL ASSOCIATION have each been furnished with a copy of the "Proposed Interpretive Statements for Warnings on Drugs and Devices for Over-the-Counter Sale," published in the *Federal Register* on Thursday, March 26, 1959. Numerous comments and suggestions have been received from individual members engaged in the production and distribution of the drugs under consideration. These comments covered warning statements for specific drugs as well as consideration of the general program of adequate warnings to be placed on the labels of drugs for over-the-counter sale.

The members of our ASSOCIATION do not believe that the potential users of potent or dangerous drugs now permitted to be sold over the counter can be properly safeguarded against misuse by a mere warning statement or caution printed on the label or in the labeling. A warning statement on a label is not a sufficient safeguard against misuse by laymen, or overdosage, or other harmful effects, when drugs are purchased over the counter without competent professional advice.

As will be pointed out in specific instances later in this statement, the lay public is not prepared by education or experience to judge the potential harmfulness of some drugs without the guidance of physicians, pharmacists, or other professional personnel skilled in the diagnosis of disease or in the production and distribution of drugs and aware of the potential dangers inherent in the use of all drugs. The average citizen, who may be led to purchase a drug without a physician's prescription, is not in a position to diagnose his own ills nor to determine whether he is afflicted with any organic disease. Neither is he able to determine whether symptoms he may be experiencing are significant enough to constitute good reasons for abstaining from the use of certain drugs.

Drugs requiring cautionary or warning statements such as are suggested, for example, under Acetanilid, Antipyrine, Belladonna preparations, Bromides, Ephedrine preparations, Phenylephrine, Phenylpropanolamine, Antibiotics, Dicyclomine, Dyclonine, and other dangerous drugs, should not, in the judgment of members of the AMERICAN PHARMACEUTICAL ASSOCIATION, be sold except on prescription, since absence of knowledge based on information supplied by a physician leaves the decision with regard to use of the drug to one who is totally incompetent to judge the potential dangers to which he may be exposed.

It is the opinion of the AMERICAN PHARMACEUTICAL ASSOCIATION that the Congress of the United States, in passing the Federal Food, Drug, and Cosmetic Act, did not intend to subject laymen to the possibility of harm from the use of potent drugs. The device of placing a warning or cautionary statement on the label of a dangerous drug is not in itself sufficient to absolve the Food and Drug Administration from the responsibility of protecting the purchaser against the inherent dangers in or possible misuse of such drugs.

Continued on page 336

* Submitted to The Hearing Clerk, Department of Health, Education, and Welfare, with respect to Proposed Rule Making in the matter of "Interpretive Statements Re Warnings on Drugs and Devices for Over-the-Counter Sale."

Pharmaceutical Education for Life

This issue of THE JOURNAL is an educational number containing several authoritative papers which will be of considerable interest to the members of the profession as they contemplate the lengthened undergraduate course in pharmacy and the importance of continuing education for themselves.

There was a time when members of the profession of Pharmacy looked upon college training merely as a means of acquiring good compounding and dispensing techniques and sufficient information on drugs to be able to serve physicians and the public satisfactorily.

Today, the profession is caught in the tremendous advance that has been made in the art and science of Medicine, due largely to the rapid progress in the development of the physical and biological sciences upon which modern diagnosis and treatment of disease depend so greatly. It is also affected by the change from the actual compounding function, formerly carried on largely in the retail pharmacy, to the dispensing of ready-made and carefully standardized preparations manufactured on a large scale in splendidly equipped industrial laboratories.

We are all familiar with the lag in pharmaceutical education which occurred when those who were responsible for our teaching programs failed to keep pace with the other health professions, such as Medicine and Dentistry. Our sister professions advanced their standards for admission to the technical and professional courses when they began to realize that scientists not at all connected with the practice of the healing arts were uncovering more and more facts which had a bearing upon the composition and function of the human body and the mechanism of the organs which control the life process.

Then, too, these students of medical education and the public health and welfare came to the realization that there is a great advantage for those engaged in the healing arts to know something about the environment in which human beings live and carry on their existence. So they decided that the men and women to be educated as future practitioners of medicine should have an adequate background in the social sciences and the humanities, as well as a knowledge of the fundamental physical and biological sciences which are basic to an understanding of the functions of the human body and the cure, mitigation, and prevention of disease.

Slowly but surely we have come around to the same view in Pharmacy, although it is somewhat deplorable that there are still outstanding members of the profession who are not convinced that a pharmacist should be as well prepared intellectually as the other members of the health team. Their fears for the success of pharmaceutical education, as they measure its success, namely, in terms of numbers of persons entering the profession, tend to warp their judgment on what is best for the profession and the people it serves.

We are under the impression that the longer program of education for pharmacists will attract not only a better quality of men and women to this profession but will attract them in greater numbers, provided, of course, they are given the recognition to which the additional preparation and time spent entitles them.

A recent publication of the American Council on Education entitled "The College Influence on Student Character" is worth more than passing consideration by those who are charged with the preparation of the pharmacists of the future. It is pointed out in this volume that "today's colleges and universities are asked to produce men and women with trained intelligence as well as the strength of character that will enable them to assume especially heavy responsibilities." Who will gainsay the fact that a pharmacist, carrying out his duties conscientiously and well, is charged with heavy responsibilities?

What actually happens inside students as they go through college, and what it is in these institutions that stirs—or congeals—the development of student character, should be a matter of great interest to college faculties and deep concern to sponsors of pharmaceutical education.

To prepare a student to understand why certain acts are desirable and others undesirable so that he may foresee the consequence of his acts and become aware of certain general moral principles, standards, and values constitutes a most important product of the education and training which a student should be able to look forward to as a result of the time he spends in acquiring a college education. The acquisition of a rationale for conduct and guide to behavior is what we look for as the result of a general college education, and this is as important as the acquisition of the knowledge required to produce and dispense drugs and medicines. As a matter of fact, the more and more potent character of the instrumentalities with which we deal in fighting disease demands such basic training.

One cannot be very long among a group of young people who have had a good secondary education and who have a desire to assume some of the responsibilities of citizenship, family life, and service to their fellow men without detecting their critical evaluation of the teaching program being offered to them.

Pharmaceutical education of the future must not only be able to stand such critical scrutiny, but it must actually stir both the intellect and the emotions of young people, who have a sense of dedication, sufficiently to sustain their enthusiasm for service in one or more of Pharmacy's many facets indefinitely.—R.P.F.

A Tribute To Commissioner Larrick

On May 14 the new Detroit District Headquarters of the Food and Drug Administration, located at 1560 East Jefferson Avenue, Detroit, was dedicated.

In his dedicatory address HEW Secretary Flemming was high in his praise of the contribution which Dr. Larrick has made to the public health through his devoted service in the Food and Drug Administration. A plaque on the building was unveiled proclaiming it the George Potter Larrick Building.

Mr. Harry J. Loynd, President of Parke, Davis and Company, presided at the dinner arranged in honor of Dr. Larrick and the FDA at the Sheraton-Cadillac Hotel on the evening of May 14. Dr. Larrick spoke at the dedication ceremonies as well as at the dinner. The other principal speaker on this occasion was Michigan's Governor G. Mennen Williams. We were glad to participate in this fine tribute to Commissioner Larrick and to extend the good wishes of the APhA.—R.P.F.

Improvements in curricula and growth of research in the 76 colleges of pharmacy during the past 12 years indicate we have made significant

progress in education

*by P. H. Costello, Secretary,**
American Council on Pharmaceutical Education

THE DEGREE OF PROGRESS made in pharmaceutical education, or for that matter any sort of education, is not easy to assess. The Council believes that the colleges are getting better continually and that the Council is learning better ways to assess the schools and to stimulate them to make still greater progress. Recently the Council attempted to gain some measure of the progress made during the past 12 years. This progress has been defined in various ways. The salient facts are worth reviewing.

There are now 76 accredited colleges of pharmacy in the United States, 73 of which are Class A and one a Class C. Two colleges are sufficiently new that only 2 years of their curriculum were underway at the time of the last examination and, consequently, they are designated Y-2.

It is important to recognize how varied the nature of pharmaceutical education is. No two of the colleges are alike; 48 are parts of state supported institutions ranging from universities to a multifaceted institute whose "emphasis is in the area of practical, vocational and technical education," 8 colleges of pharmacy are parts of institutions controlled by religious denominations, 2 are parts of municipally controlled universities, 12 are parts of privately controlled multiple institutions, and 5 are independent colleges of pharmacy.

Obviously the 5 independent colleges are completely self-contained, teaching everything from English to pharmacology, but 5 of the state-controlled institutions are also substantially self-contained as is also one of the religious institutions. While several of the colleges are associated with medical schools, in 2 cases the medical school supplies the bulk of the service courses rather than the liberal arts college and in 4 cases the medical school supplies part of the service courses. In 2 cases the college, physically, is associated intimately with the medical school but is completely self-contained or nearly so. These differences are essentially organizational ones and obviously there are many other qualitative and quantitative differences as well.

Since accurate data are not at hand concerning the conditions in the colleges prior to the recent war and since many of the items of progress are not easily reduced to quantitative terms, it is not easy to define the exact progress that has been made. Certain statements and certain facts can be brought out, however.

Administration

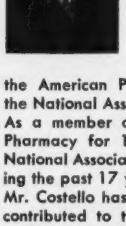
Prior to 1948, there was evidence of much loose administrative and organizational relationship of pharmacy colleges within the parent college or university. Frequently the central administration knew very little of the activities and problems of the pharmacy unit, the pharmacy unit did not receive its proportionate share of the budget, and the unit was hampered in its relations with the public and the profession. The lack of adequate representation on university-wide committees left the college too often with the sense of being orphaned. Today this picture is considerably better, pharmacy is clearly identified within the university, it is well represented on university-wide committees and communications between the college and university is materially improved.

Physical Facilities

At the close of World War II, colleges of pharmacy were, in general, poorly housed. It seemed almost axiomatic that pharmacy would be housed in the oldest building on campus, jammed into a dark basement, or the least desirable portion of a science building. Microscopes that no longer were useful to other departments, balances corroded nearly beyond repair, and other hand-me-downs were too often the pharmacy colleges' stock in trade. Lack of good housekeeping at times even seemed to suggest poverty without pride.

Offsetting this picture, is to be cited the construction of 16 new buildings solely for pharmacy, the addition of at least 16 new wings onto existing structures or the erection of new buildings shared by pharmacy and other departments or schools and at least 13 cases in which major improvements and increase in space have been made. Better replacement policies are in effect in most schools to provide for the orderly replacement of equipment subject to deterioration and obsolescence. While schools probably never really get enough scientific equipment for teaching and research, certainly today one finds the

* Presented to the American Foundation for Pharmaceutical Education, March 5, 1959.



P. H. COSTELLO, Secretary, American Council on Pharmaceutical Education, has been a member of the Council for 15 years. He served as President of the Council for 3 years prior to becoming Secretary in 1948. He also is a Past President of the North Dakota Pharmaceutical Association, the American Pharmaceutical Association, and the National Association of Boards of Pharmacy. As a member of the North Dakota Board of Pharmacy for 15 years, as Secretary of the National Association of Boards of Pharmacy during the past 17 years, and as Council Secretary, Mr. Costello has kept well informed about and contributed to the progress made in pharmaceutical education. He also is a member of the USP Board of Trustees.

basic equipment for a modern program. It is worthy of note that in a few instances the college of pharmacy is the center for advice about the use of some special technique or equipment, a public relations factor of considerable value.

Academic Qualifications of Faculty

In 1945, Dean DuMez assessed the academic qualifications of the deans and their staffs. A resurvey in 1957 by Green enables a direct comparison. In 1945 only 40% of the Deans held the Ph.D., while in 1957 the proportion rose to 76%. At the same time the number of deans having as a highest degree something less than a B.S. has declined from 10 to 4.

In 1945 there were still as many as 45 teachers without a B.S. degree but in 1957 there were only 12. The 1945 report was based on 60 schools; the 1957 report on 72. In these schools reporting, the total full-time staff has increased from 564 to 680 and the number of Ph.D.'s from 269 to 467. As late as 1945 there were a few colleges with no Ph.D.'s on the staff. Research and scholarship of the staff will be referred to later.

Educational Program

In the days when pharmacy programs were shorter than 4 years, general, so-called cultural education was almost completely absent from curriculums and basic science education was largely lacking except as it was incorporated into professional courses. Even after the advent of the 4-year program, many schools had been so indoctrinated with a rather narrow vocationalism that the programs were not always sound.

One of the most valuable services that the Council has rendered is the encouragement of faculties to improve their curricula. Today there exists about as good a balance between general education, basic science education, and professional education as one can effect within the framework of a 4-year program. Next year all colleges will go onto an extended program with one or two years pre-professional instruction. This is expected to improve the balance just cited, strengthen basic science background and yield to the professional curriculum a student both more mature and capable of carrying professional courses of a higher caliber.

Since only about 65% of the practicing pharmacists today are graduates with a B.S. degree and the technological and scientific, as well as economic, aspects of the profession are subject to rapid change, it is obvious that the continuing education of the practitioner is essential to the interests of both the public and the profession. About half of the colleges have some kind of continuation education program and it would appear to be a growing trend to carry on such a program through extension divisions. In some cases this means the employment of a full-time extension officer for pharmacy.

Graduate education has improved and expanded also. In 1945 there were 85 graduate students in pharmacy and the ancillary sciences; today there are over 600 such students. Since such programs are operated through the graduate school of the university, they are apt to be as strong or as weak as the graduate school, generally. Graduate work, except in one or two centers, is relatively new to pharmacy and suffers inevitably from its newness and pursuant growing pains. It is becoming stronger every year as predominantly young men become more mature research workers and mentors.

Substandard Colleges

When the intense program of accreditation was begun there were far too many schools that failed to meet Council standards in important respects. Consequently, a system of literal classification was begun and colleges ranking below Class A were given a reasonable length of time to reach fully accreditable status or show cause why they should not be dropped from the List of Accredited Colleges of Pharmacy. The Council believes that it has been eminently fair to the less well advanced schools in this respect, and, in fact, in the eyes of many educators we may have erred on the side of patience.

The Council worked with such colleges and tried to be as helpful as possible during this trying period. However a few colleges were not able to meet Council standards without making other arrangements. One independent college, sensing its inability to go it alone, raised over half a million dollars and used it as a dowry to become part of a municipal university of high repute. Another independent college of pharmacy dissolved, but was instrumental in persuading the state university to establish a college of pharmacy and absorb its student body and alumni. One college of pharmacy, associated with a small liberal arts college that had been ill-advised in establishing a professional school, likewise dissolved but only after arrangements had been made for the establishment of a college of pharmacy at the state university to take its students and develop a strong program. One college associated with a relatively complex institution arranged for a merger with a university-housed pharmacy school in the same city thus setting the stage for one strong college in place of two competing schools.

At the present writing there is only one Class C college remaining. The Council recently took action to abolish the literal classification system after July 1, 1959, so that henceforth all colleges are either to be accredited (comparable to the present Class A) or not. Preparatory to abandoning the literal classification and in anticipation of the compulsory 5-year program, the Council has revised its standards of accreditation. This will be published this spring as the 6th edition of the *Accreditation Manual.*

Research in Colleges of Pharmacy

In addition to the assessment of progress in the colleges of pharmacy which have been outlined briefly here, the Director also made an attempt to assess the amount and quality of research activity in the colleges. This study has been published and reprints made available to the research and development departments of the pharmaceutical industry.

During the two academic years 1956–57 and 1957–58, the colleges published 423 papers and had an additional 291 papers in press. These published papers were distributed by field as follows: pharmacy 120, pharmaceutical chemistry 113, pharmacology 89, pharmacognosy 30, pharmacy administration 16, pharmaceutical history 15, and education 47. In addition during the 2 years, 67 books and laboratory manuals were published and 53 persons wrote chapters or sections of books. Some will be surprised to note the granting of 18 U.S. patents to faculty members. About two-thirds of the papers published were in pharmacy journals and the remaining third appeared in nonpharmacy journals, including some of the leading scientific journals in the ancillary fields. To organic chemists, a measure of research activity is the number of new compounds produced, which exceeded 300.

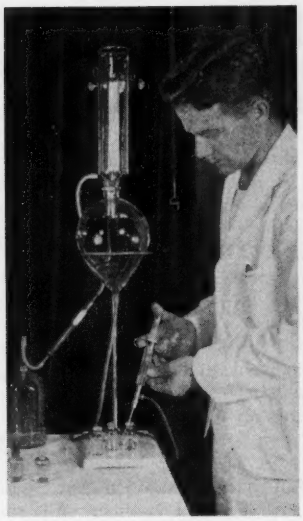
This research was made possible by 112 grants within the institutions themselves last year and 130 outside grants, principally from foundations, industry, and government. Of the $830,264 contributed to the colleges of pharmacy last year, industry contributed slightly over $200,000, private foundations contributed about $135,000, and the Federal Government about $170,000. It would appear that the colleges are becoming important research centers in a modest way that should not be overlooked in these days of scientific advance.

Since pharmaceutical education is on the threshold of the new program based on pre-professional education it seemed opportune that the Council should summarize the fine progress that the colleges have made during the past dozen years. While the Council takes reflected pride in these achievements, it is aware that no small contributing factor to this success is the American Foundation for Pharmaceutical Education. The AFPE certainly shares with the Council the hope that the next decade will bring still greater achievement. ■

Continuing education ideas for all pharmacists may be obtained by observing how hospital pharmacists keep up to date through

an institute program

by Paul Parker



A method of filling bottles with a sterile solution is demonstrated.

"I came to the institute with lots of questions. Some of the speakers discussed the very problems that give us the most trouble in our hospital, and I am anxious to adopt their suggestions." "I found that several other hospital pharmacists have the same problems." "It was interesting meeting all these people and sharing experiences."

These are typical remarks made by hospital pharmacists after attending an institute. Whenever the author visits hospital pharmacists, he discovers that they have adopted ideas from the institutes. He often hears, "We started to organize our Pharmacy and Therapeutics Committee after I attended the Institute in 1949." or, "We purchased the label stamping machine after attending the Institute in Storrs, Connecticut."

The Hospital Pharmacy Institutes offer information on new developments, suggest new procedures, and explore the philosophies behind expanded services. They bridge the gap between the classroom and everyday practice.

PAUL F. PARKER became Director of the Division of Hospital Pharmacy and President of the American Society of Hospital Pharmacists during 1956. From 1952 to 1956, Mr. Parker was Chief Pharmacist of the University of Chicago Clinics. Prior to 1952, he was Assistant to the Chief Pharmacist of the University of Michigan Hospital and was a member of the Editorial Staff of *The Bulletin* of the ASHP. During his very active career in Hospital Pharmacy, he has served as Vice President of the Illinois Society of Hospital Pharmacists and Secretary of the Chicago Branch of the APhA.

Institutes, as a continuing form of education are based upon the principle that the education of an individual has only just begun when he receives his professional degree. The tremendous advances in Pharmacy point to the need for such programs, and they are becoming more widespread in all fields of pharmacy.

In this issue of THE JOURNAL others have described the need for continuing education programs in pharmacy. It is hoped that this article, which describes some aspects of planning, administration, and coordination involved in the institutes, may be of value to others in developing continuing education programs in the many fields of pharmacy. The 18 Hospital Pharmacy Institutes held during the past 13 years represent an effort which has the approval of hospital pharmacists and hospital administrators, throughout the nation.

The Hospital Pharmacy Institutes are a joint venture of the health associations which are primarily concerned with the quality and scope of pharmaceutical services in hospitals. They are conducted by the American Hospital Association, with the joint sponsorship of the American Society of Hospital Pharmacists and the AMERICAN PHARMACEUTICAL ASSOCIATION. Regional and state hospital associations and local hospital pharmacy organizations also cooperate and support these programs.

The American Hospital Association assumes the financial responsibility for the institutes and provides the necessary staff to handle arrangements. The hospital pharmacy staff representative of the AHA and the Director, APhA-ASHP Division of Hospital Pharmacy coordinate the program. Suggestions for the program topics are made by an ASHP committee composed of practicing hospital pharmacists.

The subject matter of the programs is always basic in nature. However, it is kept up to date by scheduling topics of current interest. This programming pattern is followed because approximately 80% of the enrollees have not previously attended an institute. The need for subject matter of an advanced nature for individuals who have attended these basic institutes has justified making plans to hold an advanced institute in 1960.

Program Planning

In the planning of programs, a general theme is designated for each day of the institute. In the program shown on page 318 the theme for Monday is "Services to Nursing Units" and for Tuesday, "Departmental Management." Several topics are used to develop these general subjects. Occasionally, the students have felt that, by beginning the program on a general theme such as administration, they were not getting sufficient information for use in actual practice. The 1959 institute planners are experimenting by scheduling specific topics on the first day and developing these into a general theme later in the week.

These topics are assigned to faculty members who are selected because they may have previously discussed the subject, or because of their interest in the subject. The faculty serves on a voluntary basis; however, their travel and living expenses during the institutes are

Hospital pharmacists attending an institute inspect a radioisotope pharmacy. The institute programs are designed to develop attitudes, provide information, and to demonstrate skills.

Hospital pharmacist, John Diggs, and his wife, Princess, entertain students.

the responsibility of the American Hospital Association. Usually, hospital pharmacists present subjects on hospital pharmacy whereas administrators, physicians, research personnel, and others present topics in their own field of specialization. Members of the faculty who are hospital pharmacists participate in the institute throughout the week serving as moderators, entering into the panel discussions, and making themselves available for informal discussions with the students.

Methods of Presentation

In addition to the usual lectures, panel discussion, etc., various techniques have been used for presentation of the subjects. One speaker, at the institute held in Seattle in 1957, used an audience participation technique to demonstrate a point concerning communications. Two students were asked to sit back to back before the audience. One was given a simple geometric design and asked to describe it in such a way that the other student could duplicate the design without seeing the original. Needless to say, there was little resemblance between the two designs.

The speaker then described another design and asked the audience to reproduce it from his description. Again, the results varied. This simple technique was of tremendous help to the speaker in making his point—in addition, it proved to be a welcome variation in the program for the day. At the same institute a physician, showing slides in connection with his lecture on antibiotics, unexpectedly used a slide of

Continued on page 320

A panel discussion held in 1958 on the University of Chicago campus; these facilities provide an ideal academic-type environment for the hospital pharmacy institutes.

Sister Gonzales solicits suggestions about a hospital pharmacy internship program from institute enrollees who are serving or have completed an internship.

Institute on hospital pharmacy

program outline

Salt Lake City, Utah, June 15–19, 1959, University of Utah
Chicago, Illinois, August 3–7, 1959, University of Chicago

The Advisory Committee has prepared this outline of the material which it feels should be included in each of the sessions at the institute. It serves as a guide to members of the instructional staff, and gives a summary of the total institute content.

MONDAY,

June 15, Salt Lake City and August 3, Chicago

THEME: SERVICES TO NURSING UNITS

Morning Session

9:00–9:20 A.M. GREETINGS AND ORIENTATION

9:20–10:20 A.M. ESTABLISHED PRINCIPLES, STANDARDS AND RESOURCES FOR HOSPITAL PHARMACY

This session will serve to point out that hospital pharmacy is no longer a new entity; that there are established principles, standards, and resources where information is readily available. Two speakers will present the topic in a conversational manner employing visual aids, magnetic boards, etc. An attempt should be made to demonstrate the relationship of the Joint Committee of the American Hospital Association and American Society of Hospital Pharmacists, the Joint Commission on Accreditation of Hospitals, the Policy Committee of the Division of Hospital Pharmacy.
The background of the development of these groups and their actual relationship to the practice of pharmacy in the individual hospital should be presented.
From this session, the student must be made cognizant of the efforts that have been exerted in the past for the advancement of hospital pharmacy and of the resources presently available and at his immediate disposal. He must recognize the representation which is his at the national level.

10:20–10:40 A.M. BREAK

10:40–11:20 A.M. METHODS OF DISPENSING INDIVIDUAL PATIENT DRUG ORDERS

A description of recognized methods of processing individual patient drug orders should be presented. This presentation should include those methods dealing with drugs commonly stocked in the pharmacy and also drugs which must be obtained for a specific patient and which do not constitute part of the ordinary pharmacy stock (specific brand of drug, investigational drug, drug manufactured in foreign country, etc.). The weaknesses or strength of these methods should be discussed. Factors which have a bearing on the choice of method to be employed should be reviewed. Visual aid should be used in the presentation, if feasible. Blackboard demonstration, etc. is encouraged. Sample material for distribution to the registrants is advisable.

11:20 A.M.–12:00 METHODS OF DISPENSING CHARGE AND NONCHARGE FLOOR STOCK

Charge floor stock includes those drugs commonly found on nursing units, usually on a loan basis from the pharmacy to the nursing unit, for which a direct charge is made to the individual patient (intravenous solutions, ampoules, prepackaged units of tablets, etc.).
Noncharge floor stock includes those drugs commonly found on nursing units for which no direct charge is made to the individual patient.
A description of recognized methods of dispensing these drugs should be presented. How are these nursing unit drug stocks maintained? Who is responsible for replacement of used stock? Can this be accomplished without more paper work for nurses?

Afternoon Session

1:15–2:00 P.M. SUPERVISION AND CONTROL OF DRUGS ON NURSING UNITS

The American Hospital Association and American Society of Hospital Pharmacists have recommended: "To urge, through appropriate channels, that hospital pharmacists extend their responsibilities to include participation in programs dealing with the safe handling of drugs throughout the hospital."
This discussion should include methods of controlling drugs on nursing units. The speaker should offer suggestions for enlisting the nurses' cooperation. How are nursing unit inspections conducted? How often? By whom? What administrative and professional policies should be established?—regarding labeling, storage, transfer of medications, unused medications, narcotics, external drugs, biologicals, etc.

2:00–2:40 P.M. EXPEDITING PHARMACY ORDERS

This session should deal with methods of getting orders to the pharmacy and medications to the nursing units and patients expediently and efficiently. Delivery and courier systems should be discussed pointing out merits and deficiencies of such systems. How are emergency orders processed with such systems? Do these systems eliminate nursing trips to the pharmacy? What are the professional responsibilities involved? Pneumatic tube systems, dumb waiters, etc. should be mentioned briefly.

2:40–3:00 P.M. BREAK

3:00–3:40 P.M. PROVIDING TWENTY-FOUR-HOUR PHARMACY SERVICE

A number of methods have been suggested for providing "around-the-clock" pharmacy service—emergency cabinets, extending hours, on-call, intern, and resident coverage, etc. These should be discussed in a general way describing the effectiveness of each system. It is important that the pharmacist recognize his responsibility for "around-the clock" pharmacy service. Too often, pharmacy service after normal pharmacy hours is left to the nursing service. Pharmacy service should not end at 5:00 P.M. or 9:00 P.M. or midnight. If a pharmacist cannot be on duty "around-the-clock," what other alternatives have we?

3:40–4:00 P.M. CLINIC SESSION ASSIGNMENTS

4:00–5:00 P.M. CLINIC SESSION

Each afternoon, clinic sessions will be held. The student body will be divided into groups of appropriate size, according to the bed capacity of the institution with which the student is associated. Each group will be assigned a group leader who will act as a moderator during each session. Each group will be charged with three responsibilities; (1) An evaluation of the day's program, (2) Suggestions and ideas for improving the program, and (3) Discussion of the day's program in terms of its application to the operation of the student's pharmacy department. The moderator must encourage total participation in the discussion. He will serve as recorder and report to the institute coordinator daily after each clinic session. At the end of the week, a clinic session is held on the stage before the entire institute body, in which the discussion leaders and institute coordinators participate. All members of the faculty act as resource advisers and participate in the discussions only as they are invited to do so.

TUESDAY,

June 16, Salt Lake City and August 4, Chicago

THEME: DEPARTMENTAL MANAGEMENT

Morning Session

8:30–9:10 A.M. PLANNING AND ORGANIZING

The pharmacy service which can be offered in the hospital is directly proportional to the care which has been taken in planning and organizing the pharmacy department. The speaker should outline steps that should be taken in planning the department from an administrative point of view. What is the scope of service to be provided? Does the department have a policy statement outlining its purpose, function, and responsibilities? Who is in charge of the department when the chief pharmacist is absent? What are the responsibilities of the pharmacy personnel? How are complaints from other departments handled and by whom? This session should also provide a setting for the next presentation.

9:10–10:20 A.M. DEVELOPING WRITTEN POLICIES AND PROCEDURES

This session will include a discussion and illustration of policies and procedures for hospital pharmacy practice.
Writing a procedural manual is a continuing process. Too often, pharmacists look upon this as an ominous task, beyond the realm of accomplishment. This outlook is due, in part, to a lack of understanding of the basic reason for having a procedural manual. It should be stressed that such a manual is developed gradually, a little at a time, as the need arises. Basic advantages for having the manual should be presented. What should be included? How does one start? Samples of policies and procedures should be distributed. Several manuals should be displayed.

10:20–10:40 A.M. BREAK

10:40–11:20 A.M. MAINTAINING THE PHYSICAL FACILITIES

This session is designed to point out the need for constant periodical checking of the facilities to insure that optimum efficiency is achieved and personnel safety is assured. The speaker should list types of facilities such as typewriters, balances, weights, autoclaves, stills. Also, fire extinguishers, sprinkler systems, etc. Who is responsible for checking these? How often? What routines can be established.

11:20 A.M.–12:00 RECORDS AND REPORTS

Types of records and reports which are used in hospital pharmacies should be discussed. This discussion should include those records and reports customarily required by law and others which have been adopted as a means of transmitting information to the administrator or other departments of the hospital. Intradepartmental records and reports should also be reviewed. Sample material distribution is encouraged.

Afternoon Session

1:15–2:40 P.M. LET'S EXAMINE THE PHARMACY BUDGET

Hospitals in recent years have become "big business." As with all big business operations, tools of management must be employed. One of these tools is the budget. More and more hospital administrators are employing the budget system as a valuable working tool. Department heads are being asked to prepare and live with realistic departmental budgets.
The hospital pharmacist, as a department head and responsible for a significant portion of the hospital dollar, must be prepared to develop and understand the budget system, its advantages and limitations.
This session will be a dramatization of a budget meeting. The participants will include a pharmacist, an administrator, and a controller. Each participant will briefly discuss pertinent points which each should consider in preparing a pharmacy budget and in preparation for a budget session. The pharmacist will prepare a sample pharmacy budget for a 300-bed hospital, bearing in mind that the hospital is presently building a new addition and will be operating with 50 additional beds during the last six months of the year. He will defend is proposed budget in the meeting substantiating his request with data, trend figures, work loads, etc. Copies of the sample budget should be prepared for distribution to the students.

2:40–3:00 P.M. BREAK

3:00–3:40 P.M. JOB SPECIFICATIONS AND JOB DESCRIPTIONS

The need for job specifications and job descriptions should be emphasized. These work for both the employer and the employee in identifying the requirements needed to fit a particular position which will involve certain specific responsibilities. These will also serve to delineate responsibility among the employees. Samples should be distributed.

3:40–4:20 P.M. SUPERVISION

Review of principles of supervision. The need for supervision, particularly of nonpharmacist personnel, should be emphasized. How is supervision achieved? What relationship is there between supervision and delegation of responsibility? What are some supervisory techniques?

4:20–5:15 P.M. CLINIC SESSION

Evening Session

7:00–? QUESTIONS AND ANSWERS

WEDNESDAY,

June 17, Salt Lake City and August 5, Chicago

THEME: PHYSICAL PLANNING OF THE PHARMACY

Morning Session

8:30–9:10 A.M. LAYOUT AND DESIGN

A general discussion of factors to be considered in planning a new department or renovating an existing department. Scope of service (inpatient and outpatient), space requirements, work flow, etc. Access to utilities (elevators, stairways, etc.) and other services and departments; safety factors and security requirements; considerations such as electrical outlets, floor drains, ventilation, refrigeration, etc.

9:10–9:50 A.M. FIXTURES AND EQUIPMENT

A general discussion of the various types of fixtures and equipment and relative merits and deficiencies of each. Fixtures might include open, closed, mixed systems, and others. Equipment might include dispensing (balances, etc.), office (typewriter, adding machine, etc.), and special (prepackaging, bulk compounding, etc.).

9:50–10:10 A.M. BREAK

THEME: COMPOUNDING AND PREPACKAGING

10:10–10:50 A.M. IMPROVED SERVICES AND INCREASED SAVINGS BY BULK COMPOUNDING

This presentation should first advance the *service* aspects of a bulk compounding program and, secondly, justify the establishment of such a program through savings to the institution. It should develop the relation of a bulk compounding program to the formulary system. Students should be advised to keep records on all aspects of the bulk compounding to know where they are going and what the *actual* costs are. Reliable cost figures might be quoted. Sample formulas might be distributed.

10:50 A.M.–12:00 DEVELOPING A BULK COMPOUNDING PROGRAM

This will be panel discussion. The theme of the presentation should develop a logical sequence for establishing a bulk compounding program; the basic equipment necessary, and its justification; the development of a long-range plan.

Afternoon Session

1:15–2:00 P.M. PREPARING STERILE PRODUCTS

This is a demonstration session. Equipment should be displayed and discussed. Equipment setups for certain sterile procedures should be demonstrated and described. Sources for equipment, relative cost, etc. should be presented.

2:00–2:40 P.M. QUALITY CONTROL

Pharmacists should be impressed with the need for having quality control as a routine part of any manufacturing or compounding process, Some of these control procedures should be described.

2:40–3:40 P.M. CLINIC SESSION

2:40–3:00 P.M. BREAK (Chicago)

3:00–3:40 P.M. PREPACKAGING PHARMACEUTICALS (Chicago)

This session should deal with a discussion of techniques in prepackaging systems; control necessary; factors which determine necessity for prepackaging; who does the prepackaging; items prepackaged (floor stock, clinic preparations, fast movers). What sequence should be followed in this development? What precautions should be taken? What are the advantages? Is such a program practical in a small hospital?

3:40–4:40 P.M. CLINIC SESSION (Chicago)

THURSDAY,

June 18, Salt Lake City and August 6, Chicago

THEME: PHARMACY AND THERAPEUTICS COMMITTEE AND FORMULARIES

Morning Session

8:30–9:50 A.M. PHARMACY AND THERAPEUTICS COMMITTEE—ORGANIZATION, FUNCTION AND OPERATION

Bulletin #16 of the Joint Commission on Accreditation of Hospitals strongly recommends that hospitals establish pharmacy and therapeutics committees. The American Hospital Association and American Society of Hospital Pharmacists have approved the Statement on the Pharmacy and Therapeutics Committee outlining the purposes, organizations, and functions and scope of this committee.

This will be a panel discussion. Three factors—organization, function, and operation—will be analyzed. The moderator will introduce the subject and the three panelists will each discuss one of these factors.

Typical questions which should be explored are:

Organization:

1. How is this committee formed?
2. What authority should it have?
3. Members? Officers? Meetings?

Functions:

1. Specific functions?
2. How are they implemented?
3. What factors may influence the scope of activity of the committee?

Operation:

1. What happens in the first meeting?
2. What happens in the subsequent meetings?
3. Agenda? Conduct of meeting? Time? Place? Length of meeting?

Visual aids should be employed, if feasible. Samples of minutes, agendas, and policies governing the committee should be distributed.

9:50–10:10 A.M. BREAK

10:10–10:40 A.M. AMERICAN HOSPITAL FORMULARY SERVICE

The speaker will describe in detail the purpose, operation, use, etc., of the formulary service. He will offer suggestions regarding its application in individual hospitals. Copies of the "Formulary" will be displayed.

10:40 A.M.–12:00 OPERATING A FORMULARY SYSTEM IN YOUR HOSPITAL

This is a symposium. This session will be developed by three pharmacists, each of whom will describe the formulary system and its operation in relationship to the:

A. Medical Staff
B. Nursing Staff
C. Pharmacy Staff

The symposium participants will outline the introduction, implementation, effectiveness, acceptance, limitations, adaptations, restrictions, etc. of the formulary system on the respective groups.

Every effort should be made to point up obstacles encountered, problems created and solved, and technicalities involved.

Early experiences in implementing the American Hospital Formulary Service should be cited.

Afternoon Session

THEME: PROFESSIONAL SERVICES

1:15–4:20 P.M. SYMPOSIUM ON DRUG THERAPY (Salt Lake City)

Dr. Donald C. Brodie, University of California College of Pharmacy, Medical Center, San Francisco, California, has accepted responsibility for planning the Symposium on Drug Therapy. Participants in the symposium will be notified by Doctor Brodie regarding their participation and responsibilities.

1:15–2:00 P.M. PHARMACY NEWSLETTER (Chicago)

The speaker will describe the newsletter, offering suggestions for preparation, content, format, function, etc. Sample newsletters should be distributed.

2:00–2:40 P.M. CALCULATIONS FOR PREPARING ELECTROLYTES (Chicago)

Some basic principles of electrolyte balance should be discussed. Calculations involved in preparing common electrolyte solutions in a hospital pharmacy should be discussed. Problems should be prepared for the students and several calculations should be demonstrated on the blackboard.

2:40–3:00 P.M. BREAK (Chicago)

3:00–3:40 P.M. DRUG INFORMATION (Chicago)

Dissemination of drug information is logically the pharmacist's responsibility. How can this best be achieved? Who should receive? What type of information should be distributed? What methods can be employed? A description of pharmacy, library, and reference facilities—texts, pharmaceutical literature, hospital and pharmaceutical journals, etc. What are the pharmacist's responsibilities to see that such current information as is necessary is always found on the nursing station? Distribution of sample material is suggested.

3:40–4:20 P.M. EFFECTIVE USE OF TRANQUILIZERS (Chicago)

Discussion of current trends in the use of "tranquilizing" drugs; success of treatments; toxicity; addicting properties, etc.

4:20–5:15 P.M. CLINIC SESSION

Evening Session

7:00 P.M.–? IT WORKED FOR US

This session is designed to give the institute registrants an opportunity to discuss briefly a situation or problem which they have solved or a gadget which they have put to use. A faculty member will begin on the first day of the institute to interview the registrants who may have something to offer for this session. The theme of this session—It Worked For Us—could be lengthened to include—It May Work For You.

FRIDAY,

June 19, Salt Lake City and August 7, Chicago

THEME: PROFESSIONAL SERVICES (continued)

Morning Session

8:30–9:10 A.M. EDUCATIONAL PROGRAMS FOR NURSES, MEDICAL INTERNS AND RESIDENTS

The speaker will describe the educational programs which can be conducted by the hospital pharmacists in these specific areas. This presentation should include what should be taught to *whom* and by *what* means (formal lectures, group discussions, informal meetings). What responsibilities does the hospital pharmacist have in this area? What are the advantages of conducting these programs? How does one conduct these programs?

9:10–9:50 A.M. PHARMACY NEWSLETTER (Salt Lake City)

The speaker will describe the newsletter, offering suggestions for preparation, content, format, functions, etc. Sample newsletters should be distributed.

9:10–9:50 A.M. ORAL ANTIDIABETIC DRUGS (Chicago)

An informative presentation of the new oral agents for the treatment of diabetes; their value, toxicity, potential as compared to present day treatment.

9:50–10:10 A.M. BREAK

10:10–11:10 A.M. IMPLEMENTING INSTITUTE INFORMATION

The many suggestions and ideas presented during the institute week will be of little value if no effort is made to apply some of this knowledge. The speaker should suggest ways by which application and implementation might be accomplished.

Over-enthusiasm may also cause problems in having others accept new ideas. How do we "sell" new ideas to the administrator, medical staff, or other department heads?

11:10–11:30 A.M. REVIEW REPORT TO ADMINISTRATOR

A brief report prepared by a member of the faculty summarizing the institute proceedings will be read. A copy of this report will be sent to each registrant and his administrator. This should serve as an entree for the registrant in discussing the proceedings with his administrator.

11:30–12:30 P.M. CLINIC SESSION REVIEW

The institute coordinators and clinic session leaders will hold a clinic session before the student body. The purpose of the review session will be to highlight the areas of discussion in the individual daily sessions. Time permitting, an open discussion will follow.

Afternoon Session

1:00–3:00 P.M. LUNCHEON

Presentation of certificates.

An Institute Program

Continued from page 317

a beautiful girl. Obviously, he insured the attention of everyone.

Some other techniques have also been tremendously successful. One demonstration, using a live rabbit in pyrogen testing, illustrated one aspect of a control program in the manufacture of parenteral products. Other demonstrations using radioactive isotopes, as well as actual hospital patients, have also had considerable success.

For the past two years a presentation has been developed in which two speakers discuss a subject informally, emphasizing each point by attaching signs to panels. Thus, the signs provide a complete outline of the subject. The materials used in this presentation are shown in the photograph on the cover.

Clinic sessions have been one of the most successful techniques used in the hospital pharmacy institutes. One hour at the end of each day's program is reserved for these groups, during the entire week of the institute. The sessions are moderated by student leaders and the members of the faculty do not attend. The purposes of the clinic sessions are to evaluate the program, giving each student an opportunity to discuss the presentations in terms of their application in his own hospital, and to give every student a chance to bring up problems or tell about procedures that he has found worthwhile.

Each student leader is instructed as to the purpose of the sessions and is given suggestions about methods for handling them. The leaders are required to make a verbal report of each day's session to one of the institute coordinators. These reports consist of a summary of the opinions expressed about the program; the problems encountered in getting each student to participate in the discussions, and the general topics discussed. The leaders then have lunch together on the following day to discuss the most common problems they encountered in conducting the clinic sessions and to share experiences which might be helpful in conducting the next session.

Toward the end of the week these luncheon discussions tend more toward an evaluation of the overall institute program. On the last day of the institute, the clinic session leaders participate in a round-table discussion before the entire student group with one of the coordinators serving as moderator to summarize some of the most common problems. Each clinic session has no more than 12 people, grouped according to the size of the hospital in which they are employed.

After deciding upon the topics to be included in the program and the methods of presentation, and after selecting the speakers, an elaboration of the program is developed to serve as a guide for the speakers in making their presentations. This includes a general summary of the topic with suggestions to each speaker.

The program for the next institute and the descriptions of the topics are shown on pages 318 and 319. This program includes the general theme, the titles for each presentation, the time each will begin and end, a complete description of each, and general suggestions to the speakers. By reviewing the program, each speaker readily sees the overall picture of the institute as well as his own contribution to its success.

Selection of Location

Selection of the location of the institute is important. Since the Hospital Pharmacy Institutes are intended to serve the hospital pharmacists on a nation-wide basis, each year one is held in a central location and the other near either the east or west coast.

Most of the institutes are held on college campuses. These locations are preferable to hotels for several reasons—they provide an educational environment; the facilities and equipment are usually more adaptable; accommodations are less expensive, and it is easier to keep the students together so that they can spend the maximum amount of time discussing hospital pharmacy. Many colleges and universities encourage meetings of this type during the summer months when their dormitory facilities are not fully occupied.

An attempt is made to have a meeting room of sufficient size so that all registrants can be seated on one side of the several tables which face the front of the room at a slight angle (see photograph on the cover for illustration of an ideal type arrangement). There should be sufficient space at the front of the room for visual aid equipment, public address equipment, recording equipment, and a table where several members of the faculty can be seated at one time. There should also be sufficient space at the rear of the room for display of material which was used by the speakers for illustrative purposes, mimeographed material to be distributed to the students, etc. Space should be available adjacent to the meeting room for serving coffee or other light refreshments quickly. A sufficient number of small meeting rooms are reserved for each clinic session group to meet in each day.

Dormitory and group dining facilities are desirable. These afford maximum opportunity for the students to continue discussions during unscheduled periods. It is customary to use the student cafeterias, reserving a section of the dining room for the institute enrollees.

The institute coordinators actually inspect the facilities before making final arrangements with the college or university.

Administrative Aspects

The administrative aspects of the Hospital Pharmacy Institutes are handled by the staff at the American Hospital Association. In making arrangements with a college, it is desirable to work with a member of the adminis-

Continuing education ideas for all fields of Pharmacy may be obtained by observing how hospital pharmacists keep up to date through institute programs, which are also conducted by the colleges.

trative staff. It is helpful to have a staff person designated for contact throughout the week, in order to handle unexpected situations which may arise.

The staff handles all correspondence with speakers and students, including applications. Currently, a $45 tuition fee is charged each student. Arrangements for meals and lodging are made directly with the college or university. These costs now approximate $35 for the 5 days.

Enrollment in the institutes is limited to pharmacists employed by hospitals holding institutional membership in the American Hospital Association. The initial announcement is sent to the administrator of each member hospital and administrators are encouraged to send their pharmacists to the institutes. In some instances the hospital pays all the student's expenses, in others a portion of this expense. Additional announcements are sent to all hospital pharmacists who are members of the ASHP and the APhA. Many students attend on their vacation time and at their own expense. The enrollment is limited to 125 students at each institute because experience has shown that this is the largest number which can be handled conveniently, both with regard to facilities and programming.

The methods and techniques used in hospital pharmacy institutes are not particularly new, but each year attempts are made to improve the programs to meet the growing needs of the practicing hospital pharmacist.

Attending an Institute

In addition to understanding how the staff plans and develops an institute, it is also important to appreciate the student's viewpoint.

The student arrives on Sunday afternoon and is often met at the airport, or station, by a member of the local hospital pharmacy group. He is assigned to a single room, unless arrangements have been made in advance to share a room. He will find his room nostalgic in its furnishings—the desk—the chest of drawers and the sturdy bed—with the very firm mattress.

As soon as he has unpacked, he will go to the dormitory lounge for coffee and cookies, provided by the local hospital pharmacists. There he meets the other students and some of the faculty.

Each student meets at least a half dozen people with whom he has a common interest and all go looking for Sunday evening dinner. Upon returning to the dormitory, the group continues their discussion of their hospital pharmacy problems and perhaps by 10:30 or so, they decide to "call it a day." Frequently, however, they meet another group before they get to the third floor of the dormitory and another "bull session" develops, and still another when he returns to his room and meets his roommate.

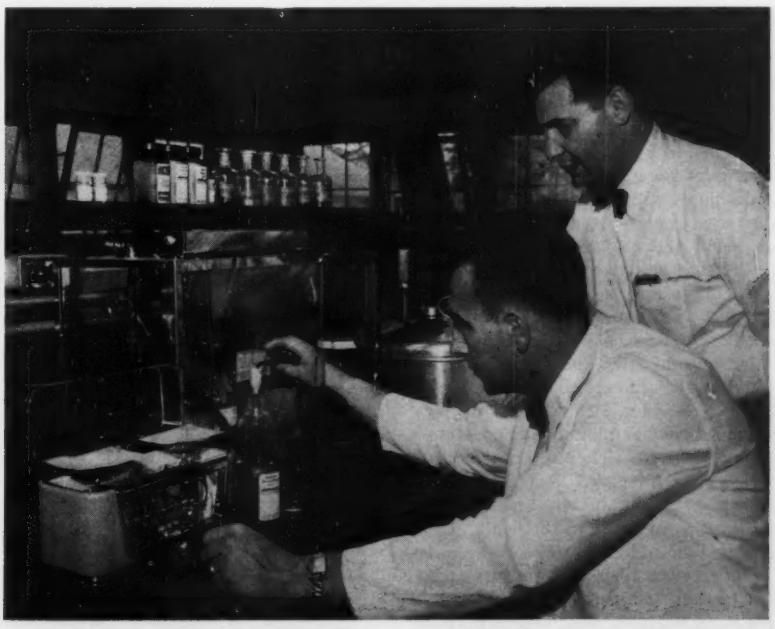
By Monday morning the students have located the community dining room and after breakfast are welcomed by representatives from the various groups sponsoring the institute. Then they are advised how they can get the most from the program. As in most things, this is proportional to what they put into it. There is a 10 minute coffee break in the morning and afternoon and a one-hour lunch period. The formal presentations usually are completed about 4 o'clock each day and the students meet informally in the clinic sessions for an hour.

The only social event of an institute program is held on Monday evening and is usually planned by the local hospital pharmacists. In previous years, these social events have included: a cruise to an island on Puget Sound for an outdoor salmon barbecue, a party at a local hotel with entertainment provided by talented enrollees of the institute, a boat-ride on Lake Michigan, and a picnic with folk dancing. Here the emphasis is on getting acquainted, with an opportunity for sharing professional experiences.

The program continues from 9:00 to 5:00 o'clock each day, ending on Friday with a luncheon at 1:00 P.M. when the certificates are awarded. Evening sessions are held on Tuesday and Thursday.

The need for programs such as those of the institutes apparently never ends. The enrollment has been oversubscribed so frequently that it is hoped more institutes will be offered in the future. The demonstrated results of these programs indicate that they are successfully developing attitudes, providing information, and demonstrating skills to the practitioner who must also be a student, if he is interested in the quality and scope of pharmaceutical service. ■

There is a growing need for the pharmacist to return to the class room to keep up to date.



Laboratory demonstrations are an important part of an institute. The University Extension Division of the University of Wisconsin offers several state-wide institutes through its Extension Services in Pharmacy.

Modern colleges of pharmacy need vigorous appraisal of graduates and a more flexible

dynamic curriculum

*by Rob S. McCutcheon, Ph.D.**

IN A BRIEF SURVEY of pharmacy school deans of one midwestern and 7 western universities and state colleges and six leading drug manufacturers, an attempt was made to determine, through opinions offered, the weaknesses and strengths of the present pharmacy curriculum. All of the schools surveyed are on the 5-year program except 2, which are on the 6-year program. The underlying purpose was to arrive at an estimate by those most concerned of the degree of adequacy of the present training program.

Weakness of Current Curriculum

The indications from all of those surveyed were that the present curriculum is weakest in two principal areas—that of general education and of practical experience. Another weakness that was repeatedly mentioned was the lack of flexibility and adjustment of the curriculum to the individual. Many strengths were mentioned by different individuals without any particular concurrence of opinion such as was seen in regard to the weaknesses mentioned.

Of those surveyed none agreed that the curriculum as it now stands was wholly adequate in the training of modern pharmacists. The drug manufacturers indicated that they were not particularly interested in pharmacy school graduates with bachelor degrees, although they employ many people with college degrees. They did not indicate a very high regard for the general pharmacy graduate and indicated his weakest points were in the field of communication and chemistry.

Judging from the above returns then, the weakest points of our training are in the early years of the school curriculum. It means that our curriculum is weak in the teaching of the basic fundamentals. If this is true it is beyond question that the teaching of the professional subjects will be seriously affected. Certainly a knowledge of basic science and the ability to communicate adequately is prerequisite to a study of the professional curriculum.

Remedies for Weaknesses

If the assertions made above are accepted in regard to the state of early training in our colleges, many pharmacy faculty members will say, "What can I do? Those subjects are taught outside of our school."

The reply must fall into two categories. First, pharmacy faculties should work more closely with those presenting the service courses so that a more desirable training is obtained. Second, all pharmacy students must be required to show an adequate mastery of fundamentals before they progress to the professional curriculum. This would be determined by requiring the attainment of a minimum grade on a comprehensive examination of basic science and mathematics at the end of the second year. The examination would determine the degree of mastery of the fundamentals through second year chemistry, physics, biology, and mathematics through trigonometry. If the examination were given and corrected by an independent agency on a national basis, the student ratings obtained in the various schools could be used with considerable validity for comparison of the basic training being given. This in turn could be used as one of the points on which the schools were rated by the American Council on Pharmaceutical Education.

Survey of Graduates Needed

The replies to the questionnaire also indicate the great need for vigorous studies of our graduates. We need to know where they go, what they do, and why they do it. We need to follow them at intervals after graduation to get the above information as well as information on the worth and suitability of the courses they had in school. If such information could be obtained in a proper and objective manner I believe that it could be of extreme value to the school in assessing its curriculum, keeping it current and helping to estimate future needs.

It has always been a mystery as to why more of this is not done. Are we afraid to look at ourselves? Are faculties lacking in courage? Surely if our schools were constantly assimilating such information and this information were correlated by a national committee or agency, much worthwhile guidance of a general nature could be given to individual faculties in their work of revision and where such work of revision was lagging such information would surely stimulate such curricular work.[1]

* Presented to the Section on Education and Legislation, APhA Los Angeles Convention, April 1958.

[1] Blauch, Lloyd E., and Webster, George L., *The Pharmaceutical Curriculum*, p. 246 (1952).

DR. ROB S. McCUTCHEON, Professor of Pharmacology at Oregon State College since 1948, received his Bachelor of Science degree at Idaho State College in 1933, his M.S. at the University of Washington in 1946, and his Ph.D. at the same school in 1948. Dr. McCutcheon is a Fellow of The American Foundation for Pharmaceutical Education.

For example, it is generally accepted that about 75% to 85% of our graduates go into retail pharmacy. How can we know whether their training is adequate if studies of them and their activities both professionally and otherwise are not constantly made? We might also ask ourselves what happens to the other 15% to 25%? Should there be more or less of them? Why did they choose the field they did outside the drug store? To what extent has their training been of special help or a hindrance in the field they have chosen?

Flexibility of Curriculum Needed

It seems obvious that such studies must be carried out constantly and frequent revisions made in the training program if the schools of pharmacy are to fulfill their function and meet present and future demands. In a rapidly expanding industry and civilization we are constantly faced with change. If the pharmacy curriculum is not flexible and capable of constant change to meet these needs the profession will pay a severe penalty, if it is not already doing so, in loss of stature and ability to take its rightful place professionally. At present our schools in general are not doing this. They are too easily satisfied with the *status quo* and too ready to look with satisfaction at the past rather than to learn some rather painful lessons from experience and courageously face the future.

Less Emphasis on Vocational Training

Of 8 deans questioned, 3 thought that the 6-year program was the only answer to our problems. The remaining 5 thought that the 5-year program would be adequate if properly administered and pointed out the attempt being made to keep their programs up to date. Their answers indicated a growing realization of the importance of the fundamentals of science in general and of Pharmacy in particular with a lessening emphasis on the purely vocational type training.

The leading engineering schools of the country have shown the way in this. For instance, MIT and many others have replaced vocational courses with ones of a basic science or mathematical content.[2] Thus, industry gets a man with less of a strictly vocational training but with a better understanding and quicker adaptability to the particular situation in which he finds himself. He is better able to profit by the training program of his employer. Pharmacy schools in general, during the changeover to the 5-year plan, have a tremendous opportunity to thoroughly revamp their programs and build in a degree of flexibility which will greatly increase their service to the profession. If this is not done, and I fear that it is not being sufficiently done, then the schools will continue to fail the profession by default.[3]

School faculties must continuously study their curriculum and their objectives in order to keep up with the times. Important fundamentals of basic science and of Pharmacy should be pin-pointed in course content and stressed. Problems and laboratory exercises should be set up to require the application of these fundamentals. Once a revised curriculum is arrived at; blind adherence should be avoided. It should be constantly scrutinized in respect to changing needs of the profession. Rote learning should be reduced and parts of the curriculum that are shown to be of little importance to the graduate should be deleted or de-emphasized. Faculties should be called on to help in revision of individual course content in order to improve the coherence and correlation of the various courses. The curriculum must be kept flexible and the individual in the school not held to a rigid program so that all graduates bear the stamp of the same mold. Pharmacy schools deserve severe criticism if they insist on prescribing a rigid course. Some agencies outside the school should exert considerable curricular influence in the school. A most important body of this type is the rating committee of the ACPE.

Colleges Administer Internships

In our survey it was interesting to note the importance many authorities place on the internship program when properly administered. If the paper on this subject by state board member Harold Tisher[4] is typical of the thinking of state boards then there is considerable variance of opinion between them and most educators. It is my opinion that the internship program should be completely divorced from the state boards and run by the school which is qualified to integrate it into the classroom experience of the student. In this, all or nearly all of the internship program would be completed before graduation. The advantages of such a program should be obvious, the principle one being the enrichment of both the course work of the college and the internship itself. All of which brings us to the old argument of who shall administer the state board examination. Since it is so clear that the state board is not qualified to participate in any but an advisory capacity in any educational matters they must eventually be relegated to their true function. ■

[2] *The Wall Street Journal*, p. 1 (Feb. 4, 1958).

[3] *The Pharmaceutical Survey* (1948).

[4] Tisher Harold, "Does the Five Year Program Necessitate a Change in Internship Requirements?" *Proceedings*, Annual Meeting, District 5 of NABP and AACP (1957).

Drama of Disease and Death

One of the Nation's most dramatic health stories of our time has been unfolding quietly and steadily among the 385,000 American Indian and Alaska native beneficiaries of the Public Health Service Indian health program.

Dr. Arthur S. Flemming, Secretary of Health, Education, and Welfare, at a news conference in Washington, D.C. recently pointed out some of the highlights:

Tuberculosis, once the leading cause of death among Indians and Alaska natives, dropped a full 40% among the Indians in a 4-year period ended with 1957. Among Alaska natives, the decrease was even greater—63% in the same period. This disease now ranks as the eighth cause of death among Indians and fifth among Alaska natives.

New cases of tuberculosis have dropped 25% among Indians and about 33% among Alaska natives.

The Indian infant death rate has been reduced by 12%.

The Indian death rate from diseases of the stomach and intestines came down by 26%.

Tuberculosis, however, still claims nearly 4 times more lives among American Indians than among the Nation's general population, and upwards of 8 times more Indians contract tuberculosis. The tuberculosis death rate among Alaska natives is more than 10 times greater than the national average.

Geographic and cultural isolation on some 250 Federal Indian reservations and in hundreds of native villages in Alaska, combined with an extremely low economic level, are serious handicaps in the provision of services.

Distances, population dispersion, and absence of local water supplies pose severe obstacles for doctors, nurses, health educators, and sanitation personnel in the Southwest. One PHS dental officer travels 10,000 miles a year treating his patients on the vast Navajo reservation, which covers an area the size of West Virginia. Construction of an urgently needed new hospital for the Papagos on the Arizona desert was delayed for months because of difficulties in locating a water supply.

Although Indian infant deaths dropped 12% in the 4 years ended with 1957, the Public Health Service recognizes that the present rate of 57 deaths per 1,000 live births is excessively high. Increasing numbers of Indian babies are born in the Service's Indian hospitals, and as a result the Indian infant death rate in the first month of life now compares favorably with that of the general population. However, because of unfavorable environment, Indian infants die at more than 5 times the rate for the population as a whole during the succeeding 11 months of life.

Student recruitment, educational patterns, and progressive thinking are

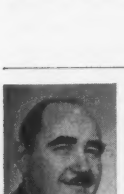
pharmacy's vital lifelines

*by Harold W. Pratt, Director**
Professional Service, Walgreen Co.

WEBSTER DEFINES ECONOMICS as "the science that investigates the conditions and laws affecting the production, distribution and consumption of wealth, or the material means of satisfying human desires, or pertaining to the satisfaction of man's needs." Pharmaceutical economics then is that which pertains to the satisfaction of Pharmacy's needs.

This paper considers some of Pharmacy's vital lifelines—student recruitment, educational patterns, and progressive thinking in retail pharmacy operation. The logical place to start is with the supply of pharmacists necessary to carry on.

* Presented to the Section on Pharmaceutical Economics, APhA Los Angeles Convention, April 1958. The views expressed in this paper do not necessarily coincide with those of the APhA.



HAROLD W. PRATT, a Registered Pharmacist in Minnesota and Illinois, has been Director of Professional Service of Walgreen Company since 1945. After receiving his Ph.C. degree from the University of Minnesota College of Pharmacy, he went with Walgreen's in Minneapolis as Pharmacist and Assistant Manager, became Store Manager, and subsequently headed several Walgreen stores. Mr. Pratt has served as Chairman of the APhA Section on Pharmaceutical Economics; Chairman of the Advisory Committee of the University of Illinois College of Pharmacy; State Drug Advisor to the Illinois Department of Welfare; and Chairman, Public Relations Committee, Illinois Pharmaceutical Association.

Recruitment for Pharmacy

Dr. Paul Briggs was right when he said in his Remington address:[1]

> "Pharmacy simply cannot survive without adequate numbers of competent pharmacists to carry on our essential function as a member of the health team."

Realizing this, the enrollment figures in colleges of pharmacy must be watched closely. The current year's figures indicate a very definite increase in the number of pharmacy students, after a period of diminishing enrollments.

Pharmacy passed through a period where the number of applicants was so large that the schools could accept only half of those desiring admission, but today too may colleges of pharmacy have been forced to take every acceptable applicant whether qualified or not. This is a very dangerous situation, but economic conditions force a school to operate at near capacity if it is to have the capable teachers and facilities necessary to turn out graduates of the caliber needed by the profession. As a result, entrance standards are sometimes lowered and students are accepted and kept on who should be encouraged to enter other fields. Even then, a large portion of the pharmacy schools did not have a full freshman class this year. In his April, 1958 editorial in THIS JOURNAL, Dr. Robert P. Fischelis said:

> "There are some who have felt that members of the profession themselves have not been sufficiently active in arousing the interest of young people in the profession they are practicing and, in fact, have at times discouraged these groups from entering the profession."

There is only one way to correct this condition and that is for every pharmacist to do his part to sell "Pharmacy as a Career" to as many young men and women as possible who have what it takes to make good pharmacists. Pharmacists must guide these prospective students to the pharmacy colleges in sufficient numbers so that the faculties will be able to do a good selection job and obtain a full complement of students who, in their opinion, will be able to absorb the knowledge which the teachers have to give them. This is a *must* if Pharmacy is to have graduates of the caliber it needs.

There is plenty of help available to pharmacists who are sincere in their desire to do their part. The American Foundation for Pharmaceutical Education, in cooperation with the American Association of Colleges of Pharmacy, has prepared a "Pharmacy Study Portfolio" consisting of all the material needed to do an effective recruitment job. Contact your local college, get the material, put it to work through civic clubs, PTA groups, high school and junior college guidance counselors, and every place where you feel it might

[1] Briggs, W. Paul, THIS JOURNAL, 18, 726(1957).

possibly help to get one more applicant for your college to screen.

There has been some work done and a lot of money spent. In the author's own field, The National Association of Chain Drug Stores and its individual members have spent considerable time and money through the use of newspaper ads and promotional work with guidance counselors. The results are very encouraging, but it will take the combined efforts of all to produce the results needed. Maximum results cannot be obtained with sporadic efforts by individual groups. Combined effort by all who are interested in the future of Pharmacy is necessary.

Leaving the recruitment problem, the author would like to touch on a delicate subject for a nonteacher, but one which deserves much more attention than pharmaceutical practitioners have given it. That subject, "Educational Patterns" covers not only subjects taught but the length of time taken to teach them. There are some educators who feel that those outside the teaching institutions have no business interfering in these matters. But pharmacists owe it not only to themselves but to those progressive teachers who realize that if they are to do a good educational job they must know what is expected from graduates and what is needed by those practicing the profession in the way of future pharmacists.

4, 5, and 6-year Course

A great deal of complaining has been heard the last few years about the colleges and their 5 and 6-year courses, yet not nearly enough constructive suggestions have been heard from the field as to what is required. Pharmacists have not been working closely enough with the schools so that they realize the problems and the requirements of retail pharmacy. They do not know because they have not been told.

There are many pharmacists who, like the author, have felt that it should not be mandatory for a student to spend 5 years in college to practice retail pharmacy. Lest he be misunderstood, let the author say that he is a firm believer in college education and realizes the need for graduate-level teaching and the dire shortage of research scientists and teachers. Realizing this, Pharmacy should have programs available for those students capable and anxious to undertake this further study, but by the same token, all are aware of the shortage of pharmacists in retail operation where certainly all will agree there is no need for technical training on a research level.

Many excellent prospective pharmacists will be lost to the retail field because they may not be willing or capable of absorbing the quantities of scientific knowledge the colleges insist on giving them. Retail pharmacy's needs and beliefs have not been discussed with the college teachers to the extent that a common ground on which to meet and help each other do a better job has been found. Attention is called to the need for a closer working arrangement between those who have graduated and are in the field practicing and those who are teaching future practitioners. If retail pharmacists had been working closer together, maybe pharmacists would not be talking about 4, 5, *or* 6-year courses but about 4, 5, *and* 6-year courses today. Get closer to your college. Help it to help you.

Progressive Thinking

The third subject concerns one which has also been controversial. Changes have taken place in retail operations during the past several years, and all seem to be far apart in their thinking concerning which road is the right one.

It is true that retail drug volumes and profits have skyrocketed in the past few years to a point where too many retailers have lost all sense of the seriousness of proper operation. There have been too many owners who have made money in spite of themselves, not because of the good job they have done. The time has come when volume shows signs of leveling off in spite of rising operating costs. This leveling off is due not entirely to a lack of buying power but also to more selective buying on the part of customers. To combat this trend, everything in our power must be done to make it more convenient, pleasant, and profitable for our customers to buy.

Supermarkets, vitamin houses—both mail order and door to door Avon-type cosmetic houses, and others—are taking a large share of retail pharmacy's volume. All of this adds up to a problem if Pharmacy is to get its share of what it has long considered its own business. Pharmacists must be willing to modernize their marketing methods. They must be realistic, and if they are they will be progressive in their thinking and will adopt ideas for selling that their customers have shown they like.

Call it self-service, self-selection, or whatever you will, the public has proved its preference for this type of store. People will buy much more on their own than pharmacists can sell them from behind the counter. Use modern fixtures to display merchandise in such a way that the public will want to buy. Do not be short-sighted or pig-headed enough to believe that "your way" can be forced on the man or woman with money to spend. Give them what they have shown they want, and you will find they will spend more with you.

Pharmacists have the ability and the know-how but they are, in too many circles, unwilling to accept progress, unwilling to modernize their marketing methods. They are prone to rely on what they call their rights as pharmacists and are unwilling to believe the facts as others see them. As a group they go too far in their demands on the courts and are not ready to accept cold reality. There are, however, in their midst those who have seen the light, who have not been afraid of change or the hard work connected with it. They are the ones who have taken the gamble and are winning the battle with nondrug outlets in their own communities.

Take the time and do the necessary studying to find ways to fit modern merchandising methods into the professional picture. Remember that convenience, service, and price are the three factors which are the determining points on where the public spends its money. There are varying degrees to which all three can be carried. There is room for prescription shops, conventional stores, and self-service stores in the drug business, but whatever type you decide you will operate, remember you cannot get by with yesterday's methods and thinking. Volume and profit cannot be legislated into the store for long—the public will not stand for it. There is a basic economic law which says, in effect, that in the American competitive system no professional, distributional, or marketing activity can exist for long unless it meets the needs and desires of the public.

There is a tremendous opportunity ahead for retail pharmacy. The U.S. population of 175,000,000 will rise to an estimated 225,000,000 by 1975. This fact alone tells pharmacists that there will be available for those who want it, millions of dollars of additional drug store volume.

It is the author's sincere belief that if we conscientiously want our share we are going to have to take a realistic look at what the public wants—what our customers want—and then give it to them. Pharmacists cannot push selfish, idealistic, and out-dated methods down their throats. This does not mean pharmacists cannot hold on to their professional rights, or that they cannot have the type of operation they desire as individuals, but it does mean that they cannot have small groups in the profession fighting progress in other segments. There is room for all types of retail pharmacies and if Pharmacy, as a whole, is to get and keep its share of this drug business it is going to have to realize this.

All pharmacists are after the same thing and if they are to achieve that end they must work together and help each other perfect their own particular facet of this complicated drug business which certainly performs a fundamental and necessary economic and professional service. ■

Future pharmacists will benefit professionally from

the extended curriculum

by George L. Webster

PHARMACISTS have always held a special place in the regard which the community has for its citizens of consequence. This high regard undoubtedly stems from the inherent respect which we all have for these possessors of special knowledge and skills who overwhelmingly resist the temptation to indulge in evil and selfish pursuits and instead concentrate on good and unselfish practices.

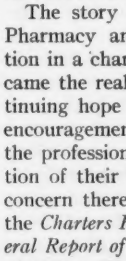
Pharmacists have not been and are not now unaware of the public regard nor of the reasons for it. They have, over the centuries, valued their station and been alert to the changing demands of their profession. The pharmacists of the first decade of the nineteenth century were under no compulsion to associate themselves together into groups of colleagues for the study of the sciences and technology of their profession. There were no laws which required them to do this, which is another way of saying that the formation of colleges of pharmacy, to educate the next generation in the existing science and art, was a voluntary obligation undertaken before the community had felt the need for such protection. The founding fathers of pharmaceutical education are universally honored for their achievements, and the same kind of careful evaluation of pharmaceutical education is just as necessary today as it was in the second decade of the nineteenth century when the first of our colleges of pharmacy was formed.

Changing Patterns

It is certain that the requirements of Pharmacy have changed over the years and are changing now. In retrospect, the rate of change seems to have been slower during the period before the first world war than since. This opinion is, no doubt, biased as a result of being too close to the changes to maintain a properly historical attitude.

Pharmaceutical education has had its men of vision who have evaluated current programs in the light of the increasing responsibilities of pharmacists for making judgments and giving advice in a period of rapidly changing knowledge of the practice of medicine, of public health, drugs, and dosage forms. They have sounded the calls which resulted in two surveys of the profession and the business of Pharmacy within 22 years of each other. There come to mind in this connection such men as A. B. Lemon, Edward Kremers, Frederick J. Wulling, H. Evert Kendig, and Rufus A. Lyman, among others, who had opinions as to what Pharmacy should be and proclaimed it on all occasions.

The story of how their concepts of Pharmacy and pharmaceutical education in a changing scientific climate became the reality of today and the continuing hope of tomorrow, should give encouragement to all. It is plain that if the profession had not had the inspiration of their foresight and unremitting concern there would have been neither the *Charters Report* of 1927 nor the *General Report of the Pharmaceutical Survey* of 1949. These two reports, and the resulting discussion which they provoked, have been influential in bringing about the improvement as well as the lengthening of the period of education for the practice of pharmacy.



DR. GEORGE L. WEBSTER, Dean, University of Illinois College of Pharmacy, was graduated from the University of Illinois College of Pharmacy with the Ph.G. degree in 1922 and became a registered pharmacist in 1923. He received the B.S., M.S. in Pharmacy, and Ph.D. in Pharmaceutical Chemistry from the University of Michigan. Dr. Webster is Secretary-Treasurer of the AACP and has served as Chairman of its Committee on Curriculum. He has been a member of the Board of Directors, American Foundation for Pharmaceutical Education (1951–56); of the USP Revision Committee (1950–60); of Rho Chi (President, 1948–50); of Sigma Xi; of Phi Lambda Upsilon; and of Phi Kappa Phi.

Pharmacy Surveyed

The more recent survey—*The General Report of the Pharmaceutical Survey*—contained sufficient factual material and reasoned conclusions to convince most of the pharmacists, businessmen, editors, administrators, and nonpharmacy educators who were in the majority on the Committee on the Pharmaceutical Survey, as well as the deans and professors in colleges of pharmacy, that "there is a profession of Pharmacy" as well as a "business of pharmacy."

It was made clear that the profession of Pharmacy had grown more demanding in its use of the basic sciences of chemistry, physics, mathematics, biology (both macro and micro), physiology, and pharmacology, with the change from individually processed natural drugs and their preparations to the mass produced, carefully measured doses of the modern high potency synthetic drugs and highly purified natural products. It was emphasized that while the percentage of dosage forms which were extemporaneously prepared in the laboratory of the community pharmacist had declined and was declining, a large body of knowledge about extremely potent drugs was necessary in order to present these drugs to the patient in an effective form and to protect them from serious deterioration.

In regard to the declining *percentage* of total prescriptions filled which are extemporaneously compounded, it would be interesting to know if the *number* of compounded prescriptions had declined.

The business of pharmacy was likewise surveyed and the conclusion drawn

that since the continued survival and growth of the profession of Pharmacy was inseparably dependent upon the business of pharmacy, the education of pharmacists should include more of the fundamental training upon which good business management is based. It was pointed out by specification and implication that the business of pharmacy was concerned not alone with the final step in a series of activities which brought effective medication to a person who needed it, *i.e.*, the management of the community pharmacy. The business of pharmacy included all of the complex operations of managing and financing the procurement, processing, research programs, fabricating, chemical, pharmacological, and clinical testing, advertising, promoting, and distributing the products of the pharmaceutical industry before it reaches the community pharmacy.

One of the impressive studies reported in the *General Report of the Pharmaceutical Survey* was that which listed the questions asked of pharmacists on nonspecial, randomly selected days as they performed their professional and public duties. If one needed convincing that the pharmacist is the adviser and source of information about drugs for other members of the health professions as well as the public, a study of these questions which came up on a typical day would suffice. Further, it was apparent that the pharmacists who noted the activities of their typical days were indeed functioning as guides, philosophers, and friends to the ordinary citizens in the community in nonprofessional, as well as professional ways. The giving of advice is so commonly performed in a community pharmacy that, unless a record is kept, it may go unnoted and uncredited.

Recommendations Regarding Curriculum

In summarizing the results of the various studies made by the staff and volunteers for the *Pharmaceutical Survey*, the Committee agreed on a number of matters which were concisely stated in a publication called *Findings and Recommendations of the Pharmaceutical Survey*. All of these have importance for Pharmacy, and most of them have a bearing on the education and training of pharmacists.

The recommendations, particularly those directed toward the colleges of pharmacy and the curriculum which they offer, outlined clearly the general component fields which should comprise the curriculum for the pharmacist:

(a) Adequate education in the principles and applications of physical sciences and mathematics-chemistry, mathematics, and physics.

(b) Adequate education in the principles and applications of the biological sciences—biology, botany, vertebrate anatomy, physiology, microbiology, pharmacology, and public health.

(c) Adequate education in the principles and applications of pharmacy administration—economics, accounting, marketing, management, and pharmacy laws.

(d) Adequate education in the art and technology of pharmaceutical practice—including orientation, history, ethics, the substances used as medicines and as pharmaceutical necessities, dispensing, and creative application of the sciences underlying Pharmacy.

(e) Adequate education in nontechnical subjects as a contribution to personal growth both as a person and as a citizen.

Having named the ingredients of the prescription and something of the quantities required for a well balanced curriculum, the Committee made other recommendations to the colleges:

1. Take steps immediately to improve the existing 4-year curriculum in pharmacy.
2. Begin experimentation and planning for an extended curriculum of 6 collegiate years leading to the professional degree of Doctor of Pharmacy.

Response to Recommendations

The response to the recommendations of the Committee on Pharmaceutical survey was rapid. The colleges of pharmacy began making use of them as guides for the revision of their 4-year curricula before the entire report was published. The Committee on Curriculum of the American Association of Colleges of Pharmacy had worked in close communication with the survey staff and made numerous recommendations to the Association, many of which were acted upon.

There was general agreement in the American Association of Colleges of Pharmacy that the whole prescription for pharmaceutical education as written by the Committee on Pharmaceutical Survey was desirable and optimal. Further, it was generally agreed that the five fields of education in the prescription could not be contained within the limits of 4 academic years after high school graduation. One or more of them would of necessity be neglected to insure competence in the others.

It was also agreed that the limits suggested by the Committee on Pharmaceutical Survey and the American Association of Colleges of Pharmacy Committee on Curriculum comprising 2 years of pre-professional education followed by 4 years in the professional curriculum should be recommended. The professional degree, Doctor of Pharmacy, was approved for award after the recommended curriculum but for no curriculum of shorter extent.

Advantages of Extended Curriculum

The advantages to the profession of the extended program are many:

1. It offers time and opportunity for an education in the profession as contrasted with a technological training.

2. It allows for an improved sequence of courses.

3. It provides the time and opportunity for maturation of knowledge and judgment in an atmosphere not heavily influenced by technical pressures. For a person who is to be legally intrusted with full professional responsibility almost immediately upon completion of the curriculum, the presence or absence of proper judgment is vitally important. His career and his usefulness to society depend upon it. A professional type of education distinguishes him among the people in his community which is an advantage to him and the profession.

4. Such an education can be used as an adequate reason for asking and expecting to get professional recognition in the civilian and military branches of government service. It will give Pharmacy and pharmacists a more satisfying status when measured against other professions, many of which now have longer than 4 years of college preparation.

5. A longer period of education, in particular the plan which included 2 years of pre-professional followed by 4 years of professional study would make it possible for practicing pharmacists to participate in the education of student pharmacists by joining the college faculty to give a type of in-service training which would give strength to the practical experience requirement which is required for licensure. This is a step suggested and outlined by the Committee on Curriculum of the American Association of Colleges of Pharmacy in its report of 1951.

The suggestion has almost dropped out of the thinking of curriculum planners although there was almost unanimous agreement with the judgement of the Director of the Pharmaceutical Survey that "on the whole, the practical experience requirement is loosely administered, is supervised in a superficial manner, and is productive of a minimum benefit to the prospective licensee for the practice of pharmacy." There seems to be no insurmountable difficulty in the way of making the student pharmacist responsible to the college faculty for learning while doing, but there is a reluctance to begin moving toward the implementation of the idea.

6. The professional curriculum of 4 years based on pre-professional study of 2 years affords an opportunity for the student to individualize his training through the choice of elective courses. In this way he may gain an introductory understanding of the special problems and techniques of one of the fields of Pharmacy which he may wish to join upon graduation.

The present 4-year-after-high school curriculums have undergone extensive improvement since 1948. They present parts of the subject matter called essential by the Committee but not one of them can fill the entire prescription; they have grave deficiencies in one or more of the 5 areas of instruction.

In addition to deficiencies due to omission of subject matter, the sequence of courses is frequently poor. An example of this is the common scheduling of courses involving the preparation of a dosage form of an organic drug before the student has passed the course in organic chemistry. This type of scheduling is made necessary by the requirement of offering a large number of courses in a too short span of time.

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The pharmacist can grow professionally and cope with the rapidly increasing body of knowledge through programs of

continuing education

by Donald C. Brodie, Ph.D.

PROFESSIONAL SOCIETIES in the mid-twentieth century are faced with the problem of intellectual and professional obsolescence to a greater degree than in any other time in their history. In fact the dilemma of the modern professional man, be his field education, law, theology, engineering, or a health science specialty, is how to cope with a rapidly increasing body of knowledge so that his individual practice reflects modern scientific thought and development.

Dilemma of Obsolescence

The plight of the modern practitioner is not of obscure or of ill-defined etiology. It is one that has existed for many years and one whose development was inevitable in the evolution of professional education. It is one, however, that has taken on strikingly significant implications in our times because of modern scientific and technological advances as well as socio-economic changes and attitudes. Today, the professional man stands in a changing world faced with a real challenge in his struggle to avoid personal obsolescence; his organized society now recognizes the potential threat to its professional vitality.

The educator has been more aware of the development of the problem over the years than has the average practitioner, since he is to a large degree responsible for the creation of the funds of new knowledge. The educator's approach to the slowly evolving problem has been a direct one: increase the time for formal professional education. However, the interplay of counteracting practical influences from the socio-economic world has imposed time limitations on most professional educational programs, and it is now recognized that extension of curricula has not kept pace with the rate of increase of knowledge to be taught.

Analysis of the Dilemma

Professional education in the United States has undergone numerous analyses in recent years, some prompted by intramural, some by extramural forces. From these, four attitudes that relate to the problem of out-datedness in the professions can be detected:

1. Extension of professional curricula is not the answer to the threat of obsolescence.

2. Formal preparation for the professions must be predicated on the thesis that sound training in fundamentals is the best insurance against individual obsolescence. Training in the basic disciplines of a profession provides the foundation upon which adaptability for a changing professional world can be developed.

3. The threat of obsolescence can be most effectively counteracted by programs of continuing education and professional growth during the period of professional life. In other words, education for the professions becomes a lifelong and continuing process.

4. Professional schools and colleges, particularly where they are state-supported institutions, must assume an increasing responsibility for postgraduate education.

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The great concern over professional antiquity in the health sciences was triggered by World War II, although the stage was actually set in the immediate prewar years when the door to the "golden age of medicine" was opened with the introduction of the sulfa drugs. With the conclusion of the War, full recognition of potential obsolescence was inevitable for reasons that are both numerous and complex. The most conspicuous of these were:

1. The accumulation of vast stores of knowledge from scientific and industrial advances, particularly those relating to Pharmacy, Medicine, and public health.

2. Recognition by practitioners returning from military service of out-datedness in themselves and in their colleagues.

3. The development of a continuing-education awareness resulting from the Veterans Administration-subsidized programs of formal and postgraduate professional education in the health sciences.

4. Shortages and maldistribution of professional manpower.

5. The emergence of the atomic age with attending implications to health and disease.

6. A vastly improved system of communications.

When attention is turned to the individual health professions, marked

parallelism is noted among them regarding recognition of their dilemma, the desire to counteract it, and the methods by which counteracting influences were established. The differences among the individual professions appear to lie in the degree to which the above have been developed.

Continuing Education a Solution

In the case of Pharmacy, the postwar era witnessed a great demand on the part of pharmacists for "refresher" programs, with particular emphasis on the need for information about new drugs that had been introduced while they were in the service. The schools and colleges of pharmacy responded with sporadic and often none-too-effective programs in an attempt to assist pharmacists in their readjustment to civilian responsibilities.

In its analysis of Pharmacy, *The General Report of the Pharmaceutical Survey 1946–49* commented on the need for continuing education as follows:

"What pharmacy needs today is an effective mechanism designed to furnish those practicing on the all-important retail level with new pharmaceutical knowledge in a systematic and continuous manner, properly organized and digested. A live profession of pharmacy lives on the live knowledge constantly appearing from the modern scientific laboratories. The organization and communication of this new knowledge are tasks to be assumed by professional training institutions."[1]

The recommendations of the Survey for the in-service training for pharmacists were along three lines:

1. Creation of divisions of pharmaceutical extension within the accredited schools and colleges of pharmacy.
2. Development of a variety of programs by the extension units to meet the needs of pharmacists.
3. Initiation by boards of pharmacy of cooperative efforts among the colleges, boards, organizations, etc., to the end that the needs of the profession be fulfilled.

A New Study Needed

The extent to which the recommendations of the Survey have been achieved cannot be determined until a systematic analysis of the efforts of the profession as a whole have been made. The Committee on Continuation Studies of the American Association of Colleges of Pharmacy, established in 1955–56, has proposed that funds be obtained from a suitable foundation "for a comprehensive study, the object being to furnish the colleges with assistance in developing a continuing education program."[2,3] Although many schools of pharmacy have access to a general extension service through which they can develop programs in continuing education, many schools must rely exclusively on their own resources. To the latter, the intent of the AACP Committee on Continuation Studies seems particularly pertinent.

Sometime in the foreseeable future, an evaluation of the status and influence of continuing education in Pharmacy will be needed. Such a study will of necessity require considerable subsidy and will require professional guidance in its design, execution, and evaluation. Perhaps by that time, the AMERICAN PHARMACEUTICAL ASSOCIATION will have established a standing Committee on Continuing Education and will be able to provide assistance in coordinating the national effort in postgraduate education for the profession. It is interesting to note that the Board of Trustees of the American Medical Association established an Advisory Committee on Postgraduate Medical Education in 1956.

The Current Situation

The author is unaware of any attempt in recent years to catalogue the programs or activities of schools and colleges of pharmacy at the postgraduate level. Judging from the present-day literature, there is evidence that the efforts of the colleges in this field have increased considerably over those of 10 years ago. The quality of the programs appears to be improving, attendance by pharmacists is increasing, and a greater sense of responsibility by pharmaceutical organizations in encouraging continuing-education programs is apparent. The most recent information concerning the activities of the colleges is to be found in the current issue of the *American Journal of Pharmaceutical Education* in which ten articles appear "to promote better understanding of continuing education as a part of the responsibility of pharmaceutical education."[4] In general, the programs currently offered fall within the scope of four broad categories:

1. New advances in drugs and therapy.
2. Technicological advances.
3. Administration techniques and legal developments.
4. Socio-economic changes and problems.

Program suggestions from attending pharmacists usually indicate strongly the desire for "new drug information." This would appear to parallel the increasing acceptance by the pharmacist of his responsibility as a consultant on drugs.

There is no uniformity in the design and style of present-day postgraduate programs. Some programs are one- or two-day on-campus programs, some are one-day off-campus programs, some are weekly lecture series, on- or off-campus, and at least one is circuit-rider or caravan in nature. Occasionally programs are offered that deal with special topics, e.g., radioactive isotopes, requiring several days to two or more weeks for presentation.

Pharmacy school faculties are used widely and, where available, medical school staff and business administration personnel are often included in the teaching faculty. Among the commonly used teaching techniques are the formal lecture, lecture demonstration, laboratory instruction, conference discussion, workshop, and symposium.

Programs dealing with new drugs and their uses may be devoted in a single half day session to either a single drug class, e.g., cardiovascular agents, discussed by pharmaceutical chemists, pharmacologists, and clinicians, or to several classes (antihistamines, analgesics, antibiotics) with a general discussion of each. The former technique has been very successful when applied with good professional judgment.

If pharmaceutical education is to make its contribution in continuing education to the profession at large, it will be achieved when the programs of the colleges have well-conceived objectives, and are implemented with good judgment, imagination, professional balance, and continuity. It is undoubtedly true that the prevention of obsolescence, as pointed out by Briggs,[5] is essentially a personal responsibility, but one that the colleges, too, must share.

A number of pharmaceutical organizations encourage and sponsor continuing-education programs. Two of the most successful of these are the annual institutes of the American Hospital Association and the Catholic Hospital Association, held in cooperation with the American Society of Hospital Pharmacists and the AMERICAN PHARMACEUTICAL ASSOCIATION for hospital pharmacists. Regional hospital organizations also conduct programs for hospital pharmacists. Local and state pharmaceutical associations not only encourage attendance at postgraduate programs, but also co-sponsor programs with schools of pharmacy. In addition, associations can make a worthwhile contribution to the need of the profession through an upgrading of annual programs which have had a tendency over the years to reach a point of diminishing professional return.

A reasonable summary of what appears to be the current scene in continuing education in Pharmacy is that the schools of pharmacy, in general, are making a good attempt to fulfill their responsibility to the profession. Their efforts, however, are being hampered in

[1] American Council on Education, *The General Report of the Pharmaceutical Survey 1946–49*, p. 231 (1950).

[2] Waters, Kenneth L., "Report of Committee on Continuation Studies," *Am. J. Pharm. Ed.*, **22**, 330(1958)..

[3] Bliven, Charles W., "Report of Committee on Resolutions," *Am. J. Pharm. Ed.*, **22**, 303(1958).

[4] Series of 10 articles on continuing education, *Am. J. Pharm. Ed.*, **23**, 1–34(1959).

[5] Briggs, W. Paul, "Constants and Variables in the Pharmaceutical Outlook," *Am. J. Pharm. Ed.*, **21**, 338(1957).

most instances by such limitations as lack of manpower, inadequate subsidy, and little or no guidance in the field of postgraduate education. Pharmacists have evidenced a growing concern over their own dilemma and are responding well to the programs currently available to them. Pharmaceutical organizations are recognizing the need and are actively supporting the efforts of educators and others. The efforts of the individual, the colleges, and the organizations should be supported by those of other segments of the profession. For example, the great American pharmaceutical industry, through its facilities and manpower resources, certainly can find ways to assist the profession in its effort to meet the challenge of obsolescence. This is all in the spirit of the recommendations of the *Pharmaceutical Survey*.

Evaluation of the Concept

Continuing education in Pharmacy, as in other professions, is difficult to evaluate in terms of its effectiveness. How far the influences of the present programs are filtering into the ranks of the profession is not known. If, for example, the total effort in continuing education in Pharmacy in the United States is reaching 20,000 practicing pharmacists annually, it could be said that approximately 25% of the current practitioners subscribe actively to lifelong learning. The above is undoubtedly a gross exaggeration since in California alone, during the current year, the three schools of pharmacy will have reached only an estimated 1300 pharmacists through their postgraduate programs. This figure represents less than 7% of the practicing pharmacists of the state and, although it excludes those who may have attended other educational programs unknown to the author, it points to the fact that the need for an extensive and forward-looking program in continuing education in Pharmacy exists in California and probably throughout the United States as well.

The concept of continuing education has existed among scholars for hundreds of years, but only in recent times has it evolved conspicuously as an integral part of the educational process for those who enter the professions. Lifelong learning is becoming a part of the philosophy of professional education and through it a sustaining influence for the nurture of the professions is being supplied. We accept the thesis, albeit with difficulty in a materialistic world, that the primary motivation for a career in the professions is to serve. The desire to serve is a spiritual one—it reflects an attitude of the mind and of the heart. The concept of continuing education, therefore, becomes one of re-enforcement of the primary objective in the life of a professional person. ■

Mental illness and mental health in the world of today

By Dr. M. G. Candau

Director-General of the World Health Organization

If the amount of bodily disease in the world reached the proportions of many of the existing social ills with mental and emotional causes (delinquency, alcoholism, drug addiction, suicide, etc.), not to mention classical mental disease, an epidemic state would be declared and strong measures taken to combat it.

This striking statement was made at a WHO Seminar held a few years ago, and it is equally true today. In countries with well-developed health services, about half the total number of hospital beds are occupied by psychiatric cases. Careful studies of the out-patients at large general hospitals have shown that one-third or more attend for complaints that can be traced to psychological causes. At some time in our lives indeed, most of us suffer from minor troubles that mar our happiness, disorganize our social and family relationships or affect our capacity for work. Too often such neurotic disturbances lead to overindulgence in alcohol or to drug-taking, which may in turn affect the nervous system and predispose to still more serious mental disease.

This increase in mental ill health, involving whole populations, has fortunately been accompanied by rapid progress in the treatment and prevention of mental disease, and also by a better understanding for the psychological strains and stresses that gravely affect everyday behaviour and are not without influence on the well-being of mankind.

After centuries when mentally sick people were regarded simply as "lunatics," creatures irrevocably cut off from their fellows who had to be locked up in institutions or even chained in prisons, society is slowly losing its horror of mental disease and is coming to regard it as curable like any other sickness. Psychiatry is now accepted by the public on a par with other major branches of medicine, and gone are the days when the mental asylum's main purpose was to "protect society" by keeping patients indiscriminately shut away where they could do no harm.

If treatment is begun early enough, between 70% and 80% of mental patients can nowadays be restored to a useful place in society. In some countries the average hospitalization time for patients who go away cured is less than six months. Large numbers of mental hospitals have been converted into "open door" hospitals, and very often it is possible for patients to continue living at home during treatment. Also there are more and more voluntary patients at mental hospitals.

Parallel with these advances, new knowledge has been gained about those physical ailments which are to some extent caused by psychological factors, and also about certain kinds of unsocial behaviour that are now recognized as manifestations of mental ill-health.

The old, hopeless belief that mental disease is wholly predetermined by heredity and therefore inescapable has given way before the evidence that environment may also play an important part, particularly in early childhood. This permits a more optimistic view, and underlines the truth that closely-knit family ties and a stable social structure are the best safeguards against the later development of mental health troubles.

It is often claimed that psychiatric disorders are less prevalent in the economically less-developed countries. More statistical evidence is needed to support this belief, but it may safely be said that mental health hazards become much greater among people undergoing rapid social and economic changes, and also among the large floating populations that result from easier transport and communications.

This has already occurred in the economically developed countries and will certainly become more and more pronounced in areas where development is proceeding at a spectacularly rapid pace.

I believe it to be important that people everywhere should open their eyes to the facts of the present mental health situation, and its underlying causes. This is one of the objectives of the World Mental Health Year in 1960, sponsored by the World Federation of Mental Health and its member-societies throughout the world.

It is also the purpose of World Health Day 1959, which thus offers a suitable starting point in all countries for a continuing crusade aimed at disseminating better knowledge of mental health problems, ensuring better care for the mentally unfit, and providing better chances for children to grow up in robust mental health.

The Iowa educational program has produced favorable trends in

physician dispensing

*by Dallas L. Bruner**

FOR MANY YEARS Iowa had the dubious distinction of being the black sheep in the national family insofar as physician-pharmacist relationship was concerned—and having the biggest problem to solve, the pharmacists of Iowa militantly tried to do something about it.

This is a discussion of percentage trends in physician dispensing, of the progress and success of the Iowa 15-year program, of physician-owned clinic pharmacies because they are linked to the same economic philosophy as dispensing, the motivations which inspire dispensing, and finally some of the important basic factors to be considered in any program to reduce physician dispensing and ownership.

This discussion portrays the physician dispensing picture, based on data acquired and developed over a broad 41-year period, but deals more particularly with the most recent 6-year period, on the basis of "Units of Medication" (one prescription, one injection or one packet of medication dispensed) and not on the basis of "dollar volume."

Review of Physician Dispensing

A brief review of the dispensing situation from 1915 to 1951 discloses that in 1915 approximately 40% of the Nation's physicians dispensed to 50% or more of their patients. This was reduced to 29% in the 10-year period to 1925, increased to 30% in the 10-year period to 1935, dropped again to 28% in the next 12 years ending in 1946, and had decreased to 20% by the fall of 1950. This brings us to the 6 year period—1951 to 1956, inclusive, to which we wish to give particular emphasis.

To understand the complete dispensing problem clearly, pharmacists must recognize that the pattern has never had any degree of uniformity among the states or the various sections of the Nation. For example, as far back as 1925, dispensing ranged from 2% in Montana to 75% in Indiana and Iowa, with the concentration in the midwestern area from Nebraska on the west to Pennsylvania on the east and from Minnesota and Michigan on the north to Missouri on the south. To evaluate this situation properly it is necessary to deal with it by states, areas, or sections.

In 1951 the percentage of physicians dispensing to 50% or more of their patients had developed the following pattern (only a few states are used as examples):

Alabama	8%
Georgia	7%
Indiana	56%
Iowa	60%
Nebrasks	23%
Oklahoma	12%
Michigan area	31%
Ohio area	41%

* Presented to the Section on Pharmaceutical Economics, APhA Los Angeles Convention, April 1958.

DALLAS L. BRUNER, Executive Secretary, Animal Health Institute, since December 1950, was graduated from Highland Park College of Pharmacy in Des Moines in 1920 and operated the Bruner Pharmacy in that city for many years. He was Executive Secretary of the Iowa Pharmaceutical Association from April 1946 to January 1, 1959. Mr. Bruner was President of Associated Retailers of Iowa from 1954 to 1958 and President of the National Association of State Pharmaceutical Association Secretaries from 1951 to 1952.

A 15-Year Program

In 1951, the year when Iowa first became aware of its position in comparison with other states, a 15-year program was adopted to establish better understanding and closer relationship between Medicine and Pharmacy. A description of some of the situations which were discovered by the Iowa Pharmaceutical Association (IPhA) and the problems pharmacists faced at that time are interesting.

IPhA found some older physicians practicing in the same general manner as their predecessors, except that they had traded the horse and buggy for the automobile and, in a little more modern setting, trained their office girl, technician, or nurse to practice Pharmacy and Medicine by pouring out pills and potions when the doctor was or was not in the office or even when he was on extended vacation. IPhA found many of the drug rooms stocked with inexpensive products of little known manufacturers, in many instances counterfeit products of reputable manufacturers even to color, shape, and size of tablets. They had no assurance that many of these products were even good counterfeits. The worst thing pharmacists faced was the competitive problem this posed for young physicians coming into the field, many of whom were embarrased to practice in such a horse-and-buggy manner, and who had concluded, in most instances, they had no alternative.

Fortunately, from the inception of the 15-year program IPhA was permitted to work closely with a hard core of very fine ethically minded physicians in the Iowa Interprofessional Association, the Iowa State Medical Society, and a special committee of the Medical Society.

A very important facet of the 15-year program was to try to get retail pharmacy's house in order, and to upgrade the practice, stature, and prestige of pharmacy in Iowa. This in itself posed no small problem. In many towns in Iowa, ranging from small towns to county seat towns, IPhA found older pharmacists who had never been priviledged to have physician relationship and cooperation. After years of successful operation without professional practice, they were neither interested in joining a crusade to try and change the dispensing picture nor willing to cooperate to the degree of stopping their competition with physicians by eliminating their counter-prescribing, which in many instances provided the impetus for dispensing by some younger physicians. This presented the greatest problem in areas where we found equal division between young physicians and pharmacists and those who had followed the same old competitive pattern for years.

Following an extensive educational program to members of IPhA, outlining the objectives of the 15-year program and the necessity to upgrade both the thinking and the practice of Iowa's pharmacists, IPhA was able to hold 61 physician-pharmacist meetings at the county level, on the physicians' regular county Medical Society night, over a 2-year period, at which pharmacists were permitted to talk to approximately 75% of the practicing physicians in the State. In 39 counties in Iowa IPhA was not able to break the hard core of dispenser control sufficiently even to hold a meeting.

The presentations in these meetings were made diplomatically, on a very high plane, and at the same time digging quite deeply, because in most instances it appeared the Iowa pharmacists had nothing to lose. Those who were prescribing or wanted to prescribe were most sympathetic to the cause. At no time was anything said or done to endanger the fine relationship which existed with part of the physicians in many areas.

The dispensing physician was challenged to justify dispensing either from a professional or economic standpoint. The speaker frankly referred to the quality of drugs found in drug rooms of most dispensing physicians as junk and described some of the medical practice seen as "horse-and-buggy" medication, detrimental to the patient and not in keeping with modern medical practice. Counter-prescribing was consistently condemned by pharmacists, recognizing that where there is a predominance of counter-prescribing, there is also a predominance of dispensing, and vice versa. The crusade to clean retail pharmacy's own house and stop this same "horse-and-buggy" practice of pharmacy was described. Iowa pharmacists offered fine pharmaceutical service in all areas, and also banks of medicine on which the physician could draw for pinpointed, individualized medication, and pointed to the fact that the patient would be the greatest benefactor. Until the AMA code of ethics was changed so as to appear to endorse dispensing and physician ownership, presentation could always be climaxed by pointing to the fact that retail pharmacy was seeking nothing that was not clearly set out in the principles which had been established by the AMA to guide the physician to proper practice of his profession.

The greatest hurdle to overcome appeared to be the physician's mental attitude. Educated to hold lives in the palm of his hand, he had a tendency to become kingly. That tendency caused him to resist any effort to tamper either with his method of doing things or his absolute sovereignty. This was not too general, but proved to be one of the greatest handicaps.

Success of the Program

As to success, considerably more in the first 6 years of the program has been accomplished than was anticipated for the entire 15 years. Almost over night, some entire counties were changed from almost complete dispensing to prescribing. The 60% ratio which existed in 1951 was reduced to 30% by 1956, and although no facts to substantiate it are available it is believed the percentage of dispensing physicians is below 30% at present.

In fairness, this progress could not have been accomplished without the wholehearted cooperation and fine pharmaceutical service rendered by the retail pharmacists. It could not have been accomplished without the fine cooperation received from the majority of the leaders in the State Medical Society. It has been greatly enhanced by the fine cooperation of the two colleges of pharmacy. At the State University the staff of the pharmacy college now teaches pharmacology, pharmacognosy, prescription-writing, and other related subjects to medical students.

Based on the recently adopted resolution of the AMA that state medical societies should adopt their own principles of medical ethics, particularly as regards Pharmacy, this has become the immediate project. At a meeting of the joint committees last year such a plan was inaugurated, and the chairman of the medical division of the joint committee presented this plan for adoption at their state convention. This will be referred to as a "Program for Medicine and Pharmacy" rather than a "Principles of Practice" or "Code of Ethics," upon recommendation of the physicians because they believe the name will invite less resistance.

Motives for Physician Dispensing

In trying to evaluate the motives which inspire physicians to dispense, the following passages are quoted from many who have written wisely: S. T. Rhodes, M.D., President, Michigan Academy of General Practice says:

"The type of total dispensing engaged in by many physicians today is both unprofessional and unethical—unprofessional since a portion of the fee charged is not for medical services, and unethical as the best interests of the patient are not being served. *The basis of dispensing being economic,* the less expensive medications are usually stocked. This deprives the patient of the benefits of the products of modern pharmaceutical research that are necessarily more expensive. In the absence of the indicated agent, it often leads to substitution. Thus the ultimate is frequently reached—the substitution of a substitute for a substitute!".

From the writing of William H. Helfand in THIS JOURNAL, **18,** 370 (1957), the following may be quoted:

"A physician dispenses because he is afraid to lose patients to other physicians who dispense in the area. He is afraid to give the patient a prescription because he thinks the pharmacist may overcharge and that the patient will believe the physician is responsible. He is afraid to make the patient go to another place and thus waste time for which he might be blamed. He is afraid to lose direct contact with his patients. He is insecure because he is not certain of his ability to hold onto his practice and must use some outside method to protect what he has. Like most people he is afraid to admit his fears. He is afraid also of the loss of his professional prerogatives, afraid that they might be usurped by the pharmacist who will also see the patient.

"The idea of glorification may be the second basic motive behind the practice of dispensing. The physician is one of the few remaining groups in America who is able to practice his profession alone. This individuality tends to make for a subconscious belief that he is some sort of a God, administering to the lame and the halt, and curing all the illnesses of mankind. He is making the world a better place in which to live, and granting happiness, peace, and abundance. It is a short step from such a feeling to one of the likeness unto God.

"To the dispensing physician, these feelings receive a certain measure of conscious behavior. He tends to approve all the things tending to glorify the image he has created of himself and to disapprove of those factors tending to minimize the image. He must cure the patient; no one else should. If he gives the medication, he will get the credit. Otherwise, might not the patient think the pharmacist performed a cure, after all did he not mix the medicine? If the pharmacist counter-prescribed, is he not destroying the image? If he substitutes, is he not going against the will of the "Healer?" No one must interfere with the self-image of glorification which has been created by the physician."

Other reasons for dispensing by physicians given to me personally are:

1. It is an established custom and relationship which they inherited, whereby medication is considered a part of the intimate treatment of the patient, and to some extent this is true.
2. Patients cannot afford to pay for medication in addition to treatment, and physicians are sometimes required to furnish medication free—this is not generally true and in most instances charges are higher in the doctor's office than the charge for the same medication on prescription.
3. They know the patient gets exactly the medication the physician wants, and the danger of substitution is eliminated. For many reasons this is an unsound and insincere conclusion.
4. Finally, they stress convenience; the patient gets the medication before leaving the doctor's office and is saved a trip to the retail pharmacy.

The Case Against Physician Dispensing

Unquestionably, the most effective case against physician dispensing is that no individual should have sovereignty to the extent of bringing a child into the world, diagnosing, treating, and dispensing for him all his life, and then signing his death certificate without any checks along the way.

On the other hand, most physicians do not want this responsibility and are impressed by the fact that a written prescription provides a double check of written records—getting away from the necessity of ordering and maintaining drug inventories and being free of the possibility of obsolesence and passing on to the pharmacist the possibility of not getting paid, in which case the doctor loses only his time.

In any discussion of the problem of physician-owned clinic pharmacies, these are some of the important considerations.

1. During the time that physician-ownership of pharmacies was condemned by the AMA, the number in the nation grew from nothing to a high of 521 in 1956. Recent surveys, even though the practice is no longer condemned, show a decline to 497 in 1957. Except for California, Florida, Georgia, Indiana, Missouri, New York, and Pennsylvania, all states showed a reduction or *status quo* in 1957 over 1956. This is gratifying, particularly in view of the increasing trend toward group practice.
2. It seems strange that almost one-half of all physician-owned clinic pharmacies are concentrated in three states—California with 85; Illinois with 45; and Texas with 113.
3. The motive behind physician-owned clinic pharmacies is again strictly economic. Other reasons are given such as convenience, and if no other justification is within reach, oftentimes it is claimed the average retail pharmacy is incapable of filling the particular prescription of the dermatologist, etc.

Whether the numerical improvement in 1957 over 1956 resulted from better physician-pharmacist relationship is problematical. In Iowa the experience has been—and Iowa's problem is admittendly meager by comparision—that the physicians in the clinic will prefer that a retail pharmacist of their choice conduct the pharmacy with full ownership but expect to satisfy their economic demands through high percentage rental. If was found that if the pharmacist of their choice will insist upon the ethics of a flat, reasonable rental and stick to his guns, he can get the space with no strings attached. A problem is often posed when other pharmacists aggressively petition and actually compete for the space and are sometimes willing to sell their economic and ethical birthright to get it. The problem might be partially solved if it were declared unethical for a pharmacist to be employed by a physician and his services held out to the public for a fee. In that case it might be dealt with more nearly on the same basis as dispensing. It is gratifying to know that twelve states still are reportedly free from doctor or clinic-owned pharmacies.

Some of the more important basic factors which must be considered in any program directed toward reducing or eliminating physician-dispensing are these:

1. If retail pharmacy is to obtain the respect, professional relationship, and cooperation it is asking, it must seek to merit it rather than assume that it has an inherent right to it.
2. Retail pharmacists should refrain from doing anything which might spark an open conflict with the medical profession, because neither profession benefits nor fails to lose prestige in the public mind. Dispensing, to a considerable degree, is being done by physicians who are over 60 years of age.
3. In recent years statements have been made which have had a damaging effect upon the opportunity to accomplish the thing pharmacists are seeking. Some of these statements carry a threat of force and imply that retail pharmacy is perfect while medicine is woefully delinquent and serve only to irritate even those physicians now friendly to the cause of the pharmacist. Name-calling and finger-pointing can produce nothing but harm.
4. Pharmacists should perhaps ask themselves whether they have been delinquent in not establishing the proper objectives or in lacking the courage to carry them out. If this be true, is it also true of legislation, law enforcement, education, public relations, and all of retail pharmacy's problems?
5. It has been said "We get the kind of government, the kind of professional cooperation, the kind of retail pharmacy business we deserve—we deserve professional cooperation exactly in proportion to the service we are capable of rendering and willing to render." This statement makes sense.

Although no magic formula for solving the problems of physician ownership and physician dispensing, the present position has been evaluated, including the trend of physician dispensing. On a nation-wide basis this trend is toward more prescribing. ■

Toxic Germs

The mass poisoning of the 450 AFL-CIO delegates to a conference on unemployment during April while enroute by train from Toledo to Washington has been almost completely investigated although several more months will be required to complete all reports. Questionnaires were sent to the 450 passengers to obtain more details of the episode. Of the 300 who replied, 160 listed symptoms of stomach cramps and diarrhea experienced several hours after eating a turkey dinner on the train.

Because the outbreak occurred on an interstate carrier and thus came under the jurisdiction of the Public Health Service, this Agency, as well as the District of Columbia Health Department, went into action almost immediately. They now report isolation of a species of bacteria known as *Clostridium perfringens*. Although not previously considered a food poisoning hazard in this country, these organisms are reported to account for about 25% of the food poisoning cases in England. The PHS indicates that this new clue may lead to the solution of many of the 100 or more of the 200 food poisoning cases reported annually the causes of which are unknown.

Samples of the turkey dressing yielded large numbers of enterococci bacteria, as well as the *Clostridium perfringens*. The latter is an organism which causes gas gangrene and is a close relative of *Clostridium botulinum*, strains of which produce the deadliest poisons known to man.

Precautions

The Public Health Service has recommended eight precautions for automobile drivers during the 4th of July weekend:

1. Avoid fatigue by alternating driving with others.
2. Plan dinner and a rest for the dusk-to-dark period of changing light.
3. Try to control emotional upsets, caused by such incidents as traffic delays. They frequently lead to driving behavior such as speeding, cutting in, and unsafe passing.
4. When possible, avoid driving during the peak accident period from 3 P.M. to 11 P.M.
5. Anticipate possible reckless driving by others and drive with special attention to other cars.
6. Be sure all mechanical equipment—tires, brakes, and lights—are in top working order.
7. If the car is equipped with safety belts, use them.
8. If a prospective driver suspects that he has any physical condition that might affect control of the car, he should consult his physician before starting his trip.

Dr. James Goddard, Chief of the Public Health Service's Accident Prevention Program, said that the eight rules are good for round-the-year driving.

A review of methods of achieving slow and steady release of medication during an extended period of time to provide

prolonged drug action

by Edward Stempel, Ed.D.

PART ONE

DRUGS MAY BE ADMINISTERED for immediate action or for prolonged action. Prolonged action is not to be confused with delayed action. With prolonged action, there is usually a slow and steady release of the drug during an extended period of time; with delayed action, the drug is usually released several hours after administration.

The principle common to the techniques for providing prolonged action is that of slowing solution of the active ingredient in the circulating body fluids.

Rate of Absorption Influenced By Route of Administration

The choice of the route of administration usually varies with the requirements of the patient and the properties of the drug. Although duration of action is influenced by the rate at which different drugs are absorbed and excreted, the route of administration usually influences the rate of absorption.

Parenteral Route

In using injectables, the intravenous route is employed when rapid action is essential during emergencies. Intramuscular administration of water-soluble drugs provides less rapid action, while the rate of absorption after subcutaneous administration is usually slow and even.

Oral Route

Drugs are usually absorbed slowly when administered by the oral route; this method of drug administration is most convenient and the most common method used. If a tablet is permitted to remain in the mouth, considerable absorption may occur in the mucous membrane of the mouth; however, when a drug is swallowed rapidly, absorption commences when the drug reaches the stomach.[1] Absorption from the stomach varies with the amount of food in the stomach, the solvent vehicle (if any), and the form of the drug.[2]

Although absorbability from the mouth and stomach is primarily a property of the specific drug, the dosage form also influences absorption. For example, solutions are usually absorbed faster than powdered medication or powders compressed into tablets because drugs can only be absorbed after they have been dissolved.

Rectal Route

Enesco *et al.*,[3] in studying the comparative absorption of 6 drugs in 63 normal individuals, found that each of the following 5 drugs, in separate aqueous solutions, is absorbed in therapeutic quantities more quickly rectally than orally: sodium salicylate, chloral hydrate, methylene blue, atropine sulfate, and morphine sulfate.

Most medicinal agents administered in suppository form by the rectal route in a theobroma oil base for systemic action are usually considered to be slowly absorbed and provide a therapeutic action over a long period of time. However, Cacchillo and Hassler[4] point out that no set rule exists concerning the relative ease of absorption of drugs by the rectum, and individual studies must be undertaken to determine for each drug the base best suited for absorption. In studying the absorption of acetylsalicylic acid from the oral route as well as from various suppository bases administered rectally, these investigators[5] did not measure drug concentration in the blood at various time intervals, but only two hours after administration of the dosage form. They found that there was no significant difference between the absorption of acetylsalicylic acid from tablets given orally as compared to absorption from a Carbowax type base given rectally; however, there was significantly greater absorption from the oral tablets and the Carbowax type rectal suppositories than from either theobroma oil or glycerinated gelatin rectal suppositories.

Implantation

Drugs in a solid pellet form may be implanted under the skin and be slowly absorbed over a period of weeks or months.[6]

NNR 1957[7] states that a pellet containing 120 mg. of desoxycorticosterone acetate is slowly absorbed, exerting an effect approximately equivalent to that of daily injections of 0.5 mg. Such 120 mg. pellets are effective for 9 to 15 months; however, crumbling of the pellets may result in increased absorption

[1] Clark, A. J., *Applied Pharmacology*, 7th Ed., Blakiston Co., Phila., Pa., p. 21(1940).
[2] Davison, F. R., *Synopsis of Materia Medica, Toxicology, and Pharmacology*, 3rd Ed., C. V. Mosby Co., St. Louis, Mo., p. 24(1944).
[3] Enesco, J., Branisteanu, D., and Dangeanu, J., *Bull. Acad. Med. Roumanie*, 4, 1(1939), cited by *Chem. Abstr.*, 33, 8308(1939).
[4] Cacchillo, A. F., and Hassler, W. H., *J. Am. Pharm. Assoc., Sci. Ed.*, 43, 683(1954).
[5] *Ibid.*, 684.

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and overdosage.[7] Goodman and Gilman,[8] quoting other sources, state that the subcutaneous implantation of crystalline pellets of desoxycorticosterone has been proven to be an effective and convenient method for controlling Addison's disease in patients.

In order to maintain a constant level of riboflavin in the tissues, Bromberg, Brzezinski, and Sulman[9] implanted riboflavin pellets in patients. The method was particularly advantageous in patients who could not be trusted to take medication regularly. Pellets containing 50 mg. of riboflavin fused with 50 mg. of cholesterol maintained a high riboflavin level in man and animals for 45 days.

Prolonged Blood Levels

Many drugs are not uniformly distributed throughout the body or even stored in the blood stream. Frequently, the drug level in the blood stream does not parallel the physiological action. In general, body concentration rather than blood stream concentration should be emphasized. Nevertheless, body concentration is indicated by measuring drug concentration in the blood. Therefore, it is generally stated that the usual aim in therapeutics is to maintain a certain constant concentration of the drug in the blood stream. This drug concentration in the blood is referred to as *blood level*, or, more specifically, *drug blood level*.

With drugs that are absorbed quickly and excreted rapidly, it is not desirable to produce a prolonged blood level by giving massive doses. Not only is there a limit to the quantity of a drug that can be safely introduced into the body in massive dosage at one time, but it is generally an ineffective as well as dangerous method for the production of prolonged action.[10] Some methods for prolonging action are: delaying excretion, slowing the rate of absorption, or utilizing frequent dosage. The last method is not too desirable.

Delayed Excretion

While it is often possible to govern the rate and amount of drug absorption, it is only rarely possible to govern the rate of drug excretion.[11] The method used to delay drug excretion consists of the reversible inhibition of renal excretion. Carinamide (caronamide or 4′-carboxyphenylmethanesulfonanilide) given with penicillin to dogs caused an increase in plasma penicillin concentration and a delay in penicillin excretion by the kidneys.[12] More recently, probenecid (Benemid) has been used to prolong and maintain the therapeutic effect of penicillin by delaying renal tubular excretion of penicillin with no apparent evidence of kidney damage. Probenecid also interferes with renal tubular excretion of *p*-aminosalicylic acid, as well as *p*-aminobenzoic acid, by inhibiting their conjugation with glycine.[13] Probenecid is therefore useful as an adjuvant to intensive therapy with some compounds by increasing and prolonging the plasma concentration of these agents.

Slowed Absorption

Among the many factors resulting in a slowing of the rate of absorption are: vasoconstriction, immiscibility, insolubility, particle size, viscosity and nature of the vehicle, esterification, polymerization, delayed disintegration, and adsorption (including ion exchange).

Vasoconstriction

The incorporation of a vasoconstrictor in a solution of a drug to be injected subcutaneously tends to retard absorption and provide release over a prolonged period of time. This technique is used in the combination of epinephrine with local anesthetics.[13] Specifically, since the anesthetic effect of procaine hydrochloride is not maintained, it is usually administered with a solution of epinephrine, serving as a vasoconstrictor, to retard the rate of absorption of procaine.[14] The preparation which may be used is Procaine Hydrochloride and Epinephrine Injection USP XV, usually containing 2% procaine hydrochloride and a 1:25,000 concentration of epinephrine.[15]

Immiscibility

In the event that a prolonged action of a drug is desired, the delaying effect of an oil may be of value, regardless of the viscosity which the oil contributes to the final product (see *Viscosity and Nature of the Vehicle* discussed below). Oils are immiscible with the moisture of the tissues and this immiscibility prevents direct contact with the cells, thus providing slower and greater duration of action.[16]

Insolubility

When suspensions are injected either intramuscularly or subcutaneously, the suspended material (deposited in the tissues) is described as a depot site ensuring prolonged release of medication.[17]

The simplest formulation of a prolonged-acting suspension is the combination of a water-soluble salt in a nonaqueous vehicle. The first successful method for prolonging penicillin blood levels, was the development of the Romansky formula. This contained sodium penicillin G in a vehicle of vegetable oil and beeswax; however, the product provided local irritation, pain, and the formation of sterile abscesses at the injection site.[18]

Prolonged blood levels may also be achieved by the preparation of a sparingly soluble salt, which, upon injection, will constitute a reservoir from which the drug will be released slowly.[18] If the vehicle is oleaginous rather than aqueous, even greater duration of action can usually be expected.

Because of the rapid excretion of aqueous solutions of water-soluble potassium or sodium penicillin G, intramuscular injections must be given repeatedly at intervals of 3 to 12 hours to maintain therapeutic blood levels;[29] however, the preparation of small particulate crystalline procaine penicillin G, which has a water-solubility of about 0.7%, can be used when it seems desirable to prolong a given effective penicillin level.[30] By utilizing 300,000 units of an intramuscular aqueous suspension of procaine penicillin G, detectable concentrations of penicillin may be found in the blood of most subjects for at least 8 to 12 hours.[30] However, prolonged blood levels are obtained only at the expense of concentration; that is, lower blood levels are obtained over a longer period of time. With even less water-soluble salts, such as benzathine penicillin G, penicillin remains at demonstrable levels in the blood for even longer periods of time, but at significantly lower levels.[30] By administering 300,000 units of an intramuscular aqueous suspension of benzathine penicillin G, assayable blood levels of penicillin are available for 5 to 7 days.[26]

Particle Size

Particle size and particle size distribution are important factors in the absorption of insoluble drugs. Generally, large particles are more slowly absorbed than small particles.[19]

Simond *et al.*[20] showed that the size of Theelin crystals in an aqueous suspension is very important in determining the duration of estrogenic effect. Greater duration of action was obtained if most of the crystals were large.

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[6] Goodman, L. and Gilman, A., *The Pharmacological Basis of Therapeutics*, Macmillan Co., N.Y., N.Y., p. 8(1941).

[7] *New and Nonofficial Remedies* 1957, J. B. Lippincott Co., Phila., Pa., p. 395(1957).

[8] Goodman, L. and Gilman, A., *op. cit.*, p. 1239.

[9] Brzezinski, A., Bromberg, Y. M., and Sulman G. E., *J. Am. Pharm. Assoc., Sci. Ed.*, 46, 110 (1957), citing Bromberg, Y. M., Brzezinski, A., and Sulman, F. G., *Proc. Expti. Biol. Med.*, 64, 354(1947).

[10] Clark, A. J., *op. cit.*, p. 27.

[11] Marsh, D. F., *Outline of Fundamental Pharmacology*, Charles C Thomas, Springfield, Ill., p. 124(1951).

[12] Jenkins, G. L. *et al.*, *The Chemistry of Organic Medicinal Products*, 4th Ed., John Wiley & Sons, N.Y., N.Y., p. 292(1957).

[13] Goodman, L. and Gilman, A., *op. cit.*, p. 8.

[14] Jenkins, G. L. *et al.*, *The Chemistry of Organic Medicinal Products*, 4th Ed., p. 205.

[15] *The Pharmacopeia of the United States of America*, 15th Rev., Mack Pub. Co., Easton, Pa., p. 580(1955).

[16] Marsh, D. F., *op. cit.*, p. 117.

[17] Jenkins, G. L. *et al.*, *Scoville's The Art of Compounding*, 9th Ed., Blakiston Division, N.Y., N.Y., p. 299(1957).

[18] Barr, M., *Mid-Atlantic Apothecary*, p. 12, (January 1957).

Buckwalter and Dickison[19] have pointed out, however, that there are exceptions to the generality that large particles are more slowly absorbed than small particles. They have shown that particle size and the nature of the vehicle are interdependent; for example, delayed absorption is much greater with small particles of procaine penicillin G in oil-aluminum stearate systems than with large particles in oil or oil plus beeswax systems.[21]

Viscosity and Nature of the Vehicle

The administration of a suspension has been mentioned as a method of prolonging action. While drug insolubility results in such action, the viscosity of the vehicle has a similar effect, regardless of whether the drug is in solution or suspension.

Gelatin has been used as a vehicle for subcutaneous or intramuscular injection when slow absorption of a drug is desired.[22] In recent years, the use of gelatin in delaying the absorption of a number of drugs has grown greatly in popularity. A vehicle consisting of a gelatin solution with some dextrose is used for such drugs as heparin and adrenocorticotrophic hormone. Gelatin has also been used in preparing a parenteral gel[23] for intramuscular use that contains cyanocobalamin. These drugs, when injected parenterally, provide more prolonged effects when administered in gelatin solutions than in water solution.[24]

Dollerup and Holten[25] have reported that carboxymethylcellulose in a concentration of 1.25% has prolonged the anticoagulant effect of a heparin preparation having a concentration of 100 mg. per cc.

Oleaginous solutions of drugs usually have a longer therapeutic effectiveness than the corresponding aqueous solution. Even oleaginous suspensions of drugs usually have an increased duration of action. For example, crystalline procaine penicillin G suspended in vegetable oil provides detectable blood levels of penicillin for 12 to 24 hours. By increasing the viscosity by the addition of 2% aluminum monostearate, an adequate therapeutic blood level of penicillin may be maintained for 2 to 4 days.[26]

Buckwalter and Dickison[19] have stated, however, that viscosity *per se* does not appear to influence absorption since some rather viscous products are absorbed faster than less viscous products. Specifically, these investigators point out that relatively large particles tend to delay to some extent absorption both in the oil alone and in the oil-beeswax vehicles, but appear to accelerate absorption in the oil-aluminum monostearate suspensions.[27]

Simond *et al.*,[28] quoting Richards, Spruth, and Russell, have also provided data showing that viscosity *per se* does not influence absorption; they state that aqueous suspensions of estrone are more lasting in estrogenic action than either oil solution or oil suspension.

Esterification

A chemical advance that has proved valuable in the use of the estrogens was the finding that esters of this group of compounds have a much more prolonged activity. Consequently, the benzoic acid esters of estrone and estradiol are employed when a long-sustained action is desired.[31] Like estradiol benzoate, the diproprionate is absorbed more slowly and eliminated less rapidly than estradiol; however, the dipropionate is about one-half as potent as estradiol benzoate and possesses a more sustained action.[32]

Other drugs, besides hormones, have been esterified for prolonging their action. Chloramphenicol is available as Chloromycetin Palmitate Suspension. The chloramphenicol ester is insoluble in water, and chloramphenicol is split from the ester by the gastrointestinal juices and absorbed from the upper intestine. Blood levels rise slowly but persist longer when the ester is administered.[33] Resorcinol, usually used externally, is available as resorcinol monoacetate; and since it is hydrolyzed slowly, the effects are milder and of longer duration.[34]

To be concluded in the July Issue

[19] Buckwalter, F. H., and Dickison, H. L., *J. Am. Pharm. Assoc., Sci. Ed.*, **47**, 661(1958).
[20] Simond, A. *et al.*, *ibid.*, **39**, 53(1950).
[21] Buckwalter, F. H. and Dickison, H. L., *op. cit.*, 663.
[22] Osol, A. and Farrar, G. E., Jr., *The Dispensatory of the United States of America*, 24th Ed., J. B. Lippincott Co., Phila., Pa., p. 496(1947).
[23] "New Prescription Products," THIS JOURNAL, **18**, 181(1957).
[24] *Gelatin*, Gelatin Research Society of America, Inc., 17 John St., N.Y., N.Y., p. 22(1954).
[25] "New Research," *American Druggist*, p. 49 (Sept. 23, 1957).
[26] Barr, M., *op. cit.*, p. 13.
[27] Buckwalter, F. H. and Dickison, H. L., *op. cit.*, p. 662.
[28] Simond, A. *et al.*, *op. cit.*, p. 52.
[29] *New and Nonofficial Remedies* 1957, p. 131.
[30] *Ibid.*, p. 129.
[31] Goodman, L. and Gilman, A., *op. cit.*, p. 1195.
[32] Jenkins, G. L. *et al.*, *The Chemistry of Organic Medicinal Products*, 4th Ed., p. 132(1957).
[33] Barr, M., *Mid-Atlantic Apothecary*, p. 11, (March 1957).
[34] Osol, A. and Farrar, G. E., Jr., *op. cit.*, p. 977.

Straight from Headquarters

APhA Comment on Warning Statements for Drug Labels

Continued from page 312

The Congress has provided in the Federal Food, Drug, and Cosmetic Act a protective device which should be used to the fullest extent in guarding consumers against the effects of promiscuous use of potent drugs. This device consists of restricting the dispensing of such drugs to the prescription of a physician or other practitioner of medicine licensed by law to prescribe and administer drugs.

The members of the AMERICAN PHARMACEUTICAL ASSOCIATION believe that this protective device should be employed to the fullest extent and that drugs which are potentially dangerous should not be sold over the counter without a prescription.

If it is considered to be in the public interest to make any potent drugs available over the counter without a physician's prescription, a further caution to purchase such toxic, dangerous, harmful, or deleterious drugs only on competent medical advice or where competent professional advice as to their potential dangers is available should be added to the label and labeling.

The following specific comments are submitted with regard to the proposed warning notices:

Subpart A—*Definitions and Interpretations*

131.9 General warnings re accidental ingestion by children
(a) It is suggested that the inclusion of these warning statements on all drugs would weaken the importance of the warning where it is really needed.
(b) It is suggested that this warning statement be included on the label of each preparation bearing a suggested warning against use by, for, and administration to children.

131.10 Conspicuousness of warning statements
It is suggested that the requirement for placing warning statements in juxtaposition with the directions for use be modified to require this "if possible" due to the difficulty of meeting the requirement in connection with certain labels.

Subpart B—*Drugs for Human Use*

131.15 Drugs for human use; recommended warning and caution statements
Acetanilid
(a) It is recommended that dispensing of this drug be restricted to prescriptions.
(b) It is suggested that if dispensing of this drug is not restricted to prescriptions the warning should be made more explicit with regard to overdosage
Anesthetics for external use
It is recommended that dispensing of these drugs be restricted to prescriptions.
Antibiotics for external use for prevention of infection

Continued on page 355

Economics

by Richard R. Dier

Medical Care Index Up Again

The medical care cost index rose 0.1% in March 1959 and reached a new high of 154.2. This figure compares with 144.2 in March 1958 (1947–49 equals 100).

Continued advances in fees for professional and hospital services featured the rise in the medical care index.

Prescription and nonprescription drugs represent approximately 15.1% of the medical care cost index.

Chart I—Consumer Price Index[a]

City	Medical Care
U.S. city average	148.8
Atlanta	138.1
Baltimore	157.2
Chicago	155.9
Cincinnati	151.2
Detroit	157.8
Los Angeles	139.1
New York	137.5
Philadelphia	152.1
St. Louis	166.8
San Francisco	152.8

Source: U.S. Bureau of Labor Statistics
[a] United States city average and 10 cities—March 1959 (1947–49 = 100).

The U.S. city average was 148.8, with New York having a low of 137.5 and St. Louis a top of 166.8 (see Chart I for Consumer Price Index averages).

Retail Sales Surge

Sales of retail and proprietary stores totaled $589,000,000 in March 1959, an increase of about 9.0% over the $540,000,000 recorded in March 1958.

According to as-yet-unadjusted advance reports from the U.S. Department of Commerce, this trend continued in April 1959 with sales running approximately 8.0% ahead of the same month last year.

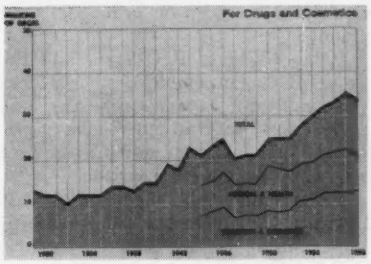
An analysis of Government reports for the first quarter of 1959 is very encouraging: January 1959 sales were 7.0% ahead of last year; February 1959 sales increased 5.0% over February 1958; and March 1959 sales were 9.0% ahead of March 1958. Consequently, first quarter 1959 sales averaged a 7.0% increase over first quarter 1958 sales.

At this rate, 1958's top sales of approximately $6,600,000,000 will easily be eclipsed by a $7,000,000,000 or more record to be established in 1959.

Drug and Cosmetic Glass Containers

Drug and cosmetic glass container shipments in 1958 declined from the record high achieved in 1957. During 1958, shipments were 33,526,000 gross (4,827,744,000 units), or 24.0% of domestic shipments. The 1957 total was 35,230,000 gross (5,073,120,000 units), or 25.2% of total domestic shipments.

Chart II—Glass Container Shipments[b]



[b] Glass Container Manufacturers Institute, Inc.

Shipments have moved steadily upward since 1930. (See Chart II.)

Of specific interest is the fact that drug container shipments have been approximately twice the amount of toiletries and cosmetic shipments since 1944.

According to the Glass Container Manufacturers Institute, Inc., the dollar volume of new glass containers totaled $822,000,000 in 1958. It is ranked third in the multi-billion-dollar packaging industry and accounts for 8% of the total packaging market. Although not generally realized, packaging is the nation's ninth largest industry and its dollar volume is ahead of the 11th-place steel industry.

Dr. Flemming Gives 3-Point Career Guide

Stressing the manpower shortage and the aim for something more than security in the careers young men seek today, Secretary of Health, Education, and Welfare Arthur S. Flemming cited a 3-point guide in choosing a career at the ninth annual Career Conference of George Washington University, Washington, D.C.

First, said Dr. Flemming, "Life's greatest satisfaction comes to those who choose a career with the best opportunity to render maximum service."

Second, he continued, "Don't worry about security; it is written into our Government's social security and employment laws and in the various companies' pension plans and hospital insurance programs."

In conclusion, he reminded students to "Consider not just the short-run but the long-term possibilities of a career."

Business Failures

Retail pharmacy failures during January–March 1959 declined from the comparable period in 1958, according to a report prepared by the Business Economics Department of Dun & Bradstreet appearing in a recent issue of *Dun's Review and Modern Industry*. Only 27 pharmacies failed in the first quarter of 1959, compared to 34 in 1958 (see Chart III).

Chart III—Retail Trade Business Failures[c]

	Cumulative Total January–March	
	1959	1958
Food and liquor	297	284
General merchandise	94	81
Apparel and accessories	296	378
Furniture, furnishings	236	291
Lumber, bldg. mats., etc.	116	142
Automotive group	246	290
Eating, drinking places	331	388
Retail pharmacies	27	34
Miscellaneous	206	200
Total	1,849	2,088

[c] Source: *Dun's Review and Modern Industry.*

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Federal and State Actions

FDA Actions

Illegal Over-the-Counter Sales for the Month of April

Florida—Robert D. Sistrunk, Jr., t/a Cash Drug Store, Dade City—Selling and refilling prescriptions for amphetamine, barbiturates, and antibiotics without physicians' authorizations. Fined $250 and placed on probation for 5 years.

Georgia—Robert Jordan Bradley, t/a Woodbine Pharmacy, Billy Leroy Lowry, pharm., Atlanta—Refilling prescriptions for tranquilizers, barbiturates, and amphetamine without physicians' authorizations. Bradley fined $750; Lowry fined $100; both placed on probation for 2 years.

Minnesota—Village Drugs, Inc., Robert E. North, pres., pharm., Robert A. North, vice pres., pharm., Allen N. Doeltz, pharm., Newport—Selling and refilling prescriptions for amphetamine, barbiturates, antibiotics, and sulfonamides without physicians' authorizations. Firm fined $500; Robert E. North fined $250; Robert A. North fined $25; Doeltz fined $25; individuals placed on probation for 3 months.

Ohio—Vernon T. Osborne and Edward P. Cogan, employees, (Aberdeen Truck Stop) Aberdeen—Selling amphetamine without physicians' prescriptions. Osborne and Cogan each sentenced to 1 year in prison.

Oklahoma—John M. Walker, t/a Walker's Drug Store, Haskell—Selling and refilling prescriptions for barbiturates, tranquilizers, and amphetamine without physicians' authorizations. Fined $110.

Hazardous Foods

A new high of 227 tons of foods hazardous to health were removed from the market during April with seizure of 210 tons of wheat contaminated with a mercurial poison with legitimate use only as a seed treatment and 14½ tons of frozen chopped spinach with an unsafe amount of the pesticide DDT, the Food and Drug Administration reports.

Following up the tragic incident of March 24 when a Haddon Heights, N.J., child died after eating flounder fillet treated with a large amount of sodium nitrite, the FDA acted to remove two shipments of imported nitrite-treated fish totaling 1½ tons from the market and stopped entry into this country of an additional 28 tons in 9 shipments.

Other foods seized as hazards to health included 5,900 packets of powdered scrambled eggs contaminated with salmonella bacteria, 4 vitamin products failing to contain vitamins and minerals essential to human nutrition, wheat and flour contaminated by rodents, 52 tons of fresh and frozen seafood in 4 shipments, practically all imported, containing parasitic cysts, spoiled frozen sperm whale meat, tomato juice, tomato cocktail, and tomato paste made from spoiled tomatoes, rodent-gnawed swiss cheese contaminated with dirt, rodent pellets, and mold, bulk granulated salt containing sand and grit, so-called "100% pure imported olive oil" totaling 16 tons (3,570 gallons) containing teaseed oil—an inferior edible oil used for industrial purposes—as a substitute, wholly or partly for olive oil, and 3½ tons of a so-called "blueberry" pancake mix, counterfeit tea, and misbranded candy products.

Drugs and Devices

Of 15 drugs and devices seized in April, 8 were alleged to be misbranded by false and misleading claims. Two were vibrator-massage devices: (1) a table model offering a "salon-at-home slenderizing plan" complete with recommended diet and (2) a small "human hand action massage unit" offered for relieving bursitis, arthritis, and rheumatism as well as reducing weight.

A liquid preparation was offered directly to the public as a cosmetic treatment for radiation fallout injuries, as well as for acne, scalp irritation, excessive itching, bed sores, fungus infections, eczema, burns, and industrial dermatitis. The FDA said such claims place a product in the class of drugs rather than cosmetics. The product must then meet requirements of the law for drug safety and effectiveness and be labeled with adequate directions and cautions for use.

Four of the seized products were for animal use, including 3 veterinary drug preparations and a medicated feed. Shipments of a prescription drug (anterior pituitary solution) were seized at 2 drug outlets on the basis that the product had no value for its intended purpose and failed to bear adequate label directions for use.

Communicable Diseases Summary

THE number of cases of the communicable diseases shown in the table below are based on reports by Health Officers of each State and of Puerto Rico to the National Office of Vital Statistics of the Department of Health, Education, and Welfare, Washington, D.C. The number of cases of each disease occurring during each of the last 5 weeks is reported and also cumulative totals to date for 1959 and for the corresponding period of 1958–1959. The approximate seasonal low point for each of the diseases is shown in the last column.

Communicable Diseases	Cases Reported for Week Ending					Cumulative Number			Low Point (Approximate Seasonal)
Selected Notifiable Disease	*Apr. 18, 1959*[a]	*Apr. 25, 1959*[d]	*May 2, 1959*	*May 9, 1959*[h]	*May 16, 1959*[i]	*First 19 weeks 1959*[j]	*1958*	*Median 1954–58*	
Anthrax	1[b]	1[e]	–	–	–	5	2	9	[k]
Botulism	–	–	–	–	1[l]	3	2	2	[k]
Brucellosis	18	20	9	11	3	250	268	350	[k]
Diphtheria	14	17	6	8	18	330	272	572	July 1
Encephalitis, infectious	29	29	35	26	26	522	526	470	June 1
Hepatitis, infectious and serum	483	457	398	448	336	9,729	6,318	9,121	Sept. 1
Malaria	1	1	4	1	–	25	20	68	[k]
Measles	14,815	16,765	15,083	16,316	14,819	265,468	493,726	392,507	Sept. 1
Meningococcal infections	53	62	51	44	46	1,040	1,137	1,275	Sept. 1
Meningitis, other	52[c]	61[f]	41[g]	56[i]	57[m]	1,195	932	– – –	– – –
Poliomyelitis	18	19	29	26	38	446	309	1,543	Apr. 1
Paralytic	13	13	20	19	18	301	160	783	Apr. 1
Nonparalytic	3	3	5	5	15	84	94	443	Apr. 1
Unspecified	2	3	4	2	5	61	55	271	Apr. 1
Psittacosis	2	1	6	–	2	45	57	110	[k]
Rabies in man	–	–	–	–	–	–	2	2	[k]
Typhoid fever	5	11	16	13	16	198	274	498	Apr. 1
Typhus fever, endemic	1	–	1	–	–	10	16	29	Apr. 1

[a] Data exclude reports from Idaho and Wyoming for the current week. [b] Reported in Ark. [c] Includes 6 cases of aseptic meningitis. [d] Data excludes report from Wyoming for the current week. [e] Reported in Pa. [f] Includes 8 cases of aseptic meningitis. [g] Includes 9 cases of aseptic meningitis. [h] Data excludes report from Wyoming for the current week. [i] Includes 13 cases of aseptic meningitis. [j] Data excludes report from Pa. for the current week. [k] Data shows no pronounced changes in incidence. [l] Reported in Miss. [m] Includes 11 cases of aseptic meningitis. Symbols: 1 dash (–): no cases reported; 3 dashes (– – –): data not available.

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Though we're slightly prejudiced in Sucaryl's favor, far be it from us to suggest that, at this moment, *all* young matrons have the product on their minds. Still and all, the little vignette above is certainly not uncommon. Weight-watchers do know and remember Sucaryl—both forms. They like the convenience of the tablets for sweetening their coffee, and the liquid for preparing all sorts of delicious, fully-sweetened dishes. And, perhaps, most appreciated is the fact that—using either form of Sucaryl—they can save a lot of calories. No wonder they "go" for Sucaryl. Abbott

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Metric Shift

One of the first letters received by the Honorable Lewis L. Strauss after he received his nomination as Secretary of Commerce dealt with the problem of abolishing the English measurement system and instituting the metric system in the United States. While addressing the American Physical Society in Washington, D.C. early in May, Secretary Strauss made some very enlightening comments:

I have long been convinced that ultimately the United States must shift to the metric system. Outside of our Anglo-Saxon culture, practically every nation has made this shift during the past 150 years or so. Every country found it possible to adopt the metric system—just as in earlier times we all shifted from the Ptolemaic to the Copernican system of navigation. No one ever regretted the temporary inconvenience of such switches. Due to our delay in taking action and due to the complexity of our industrial system, this change will be more difficult for the United States than for other countries, but when achieved it will also be more useful.

As civilization progresses, more and more people are compelled to do more and more calculating. Arithmetic and algebra could not become a tool of everyday life before Arabic numerals had been introduced. This was no doubt a painful change in its time but what enormous benefits resulted from it for all mankind.

The advantages of the metric system would be many in addition to ease of calculation and conversion. Most of our daily measurements would become more accurate. Bookkeeping and computational requirements would be reduced. Our international trade, our buying, and our selling, and many of our international aid and security programs would be facilitated. The metrological divorce between our science, research and development, and our industrial programs would be overcome.

There is absolutely no doubt, the conditions of our times—the increasing importance of science for all phases of life as well as the increasing interdependence of nations through security, travel, communications, exchange, aid, and trade—all require a convergence on one system of measurement.

The force of science and technology as well as the needs of the international economy will require the change. Science exerts an ever stronger impact on our society—and the language of science is couched in metrical terms. The more computer techniques come into significant use. . . . the greater will become our need for an efficient system of measurement.

The conquest of space will be facilitated if we first make up our minds to use the one measuring system which has the greatest potential for growth and accuracy. This system will have to be the metric system because conversions in terms of feet per second become unmanageable for truly high velocities. . . . .

Perhaps it is significant to note that the pharmaceutical industry made its own decision to go over to the metric system in the past few years. This industry is one of the most forward looking. It is devoting a high portion of its sales to research and is actively engaged in foreign trade.

Think of the British pharmacist who deals in grains, drams, grams, liquid ounces, troy ounces, cc's, pints, quarts, dozens, grosses, pounds, etc. At the end of each month, he has to close up for three days and construct a 14 x 14 transformation matrix to convert into pounds sterling, shillings and pence for his billings.

And, lest we forget, it has been medical practice in these United States to weigh all new born babies in grams—it must be the mother who determines little Johnny's weight in the English system by multiplying the grams by a factor of .002205.

Thus, the metric system is all around us. Providence has even given us 10 fingers on 2 hands thus hinting to us that the numbers 2, 5, and 10 are the natural units of measurement.

The problem, therefore, is not to make a revolution in measurement but to direct and accelerate the evolution which has been taking place. It is a matter of becoming conscious of this evolution and of giving it an assist. It is a matter of using the metric system more and more and the English system less and less.

Let me add to this point. We are engaged in a strong economic competition with the Soviet Union. It must be apparent to all that the uniformity of measurement systems between Russia and most of the world, including Western Europe, is an enormous advantage to the Soviets and a handicap to us. Further strengthening of the European common market will increase this problem.

Book Notices

Army Medical Service Formulary

Department of the Army Technical Manual 8-245, June 1958.

This Formulary, prepared under the direction of Lt. Col. W. L. Austin in the office of the Surgeon General of the Army, has broken with tradition. For the first time in the history of Army technical manuals, a series of pages appear in color. This is a comprehensive section entitled "Poisons and Suggested Antidotes."

The Formulary uses as its sources the USP XV, NF X, NND, Hopsital Formulary of Selected Drugs of the University Hospital, University of Michigan, and APhA Manual No. 101. The monographs in the Formulary are categorized according to pharmacological categories. Other areas of the manual cover pharmacy management, prescription writing, bulk drug orders, Therapeutic Agents Board System, and stock formulas.

The manual will be kept up to date by the Therapeutic Agents Board of the Office of the Surgeon General, Department of the Army.

The primary purpose of this manual is to provide, in one convenient location, essential data on the Army's current therapeutic armamentarium and to assure, through world-wide distribution of these data, uniformity in military pharmaceutical practices.

Comprehensive Medical Services under Voluntary Health Insurance

By Benjamin J. Darsky, Nathan Sinai, and Solomon J. Axelrod. Harvard University Press, Cambridge, Mass., 1958. 392 pp. Price $7.50.

This Health Information Foundation study of the Windsor Medical Services plan in Ontario, Canada, examines the 3 major components of voluntary health insurance programs—the patients, the physicians, and the insurance plan.

In Windsor almost all the privately practicing physicians participate in the plan. About 85% of the community is enrolled in the plan on a voluntary basis, and the plan provides physician's care from general practitioners and specialists in office, home, and hospital with physicians paid on a fee-for-service basis. The study indicates that the plan encourages the prompt seeking of medical care, that the much-discussed abuse of home and office services under insurance is under control, and that the Windsor community regards the plan highly and is willing to pay the additional premium for the more complete protection offered by the plan.

Interviews with 96% of the Windsor physicians showed that they view the plan as a good thing for the community, for the patients, and for the profession. About 55% of the physicians take the view that plans like Windsor Medical Services remove the need for governmental action and hence lessen its probability. About 30% however, believe the plan's success demonstrates that a comprehensive physician's-care insurance plan can function efficiently and in this way provide a guide and stimulus for governmental plan.

Hagers Handbuch der Pharmazeutischen Praxis

Edited by Professor Dr. -Ing Walther Kern and outstanding colleagues. Springer-Verlag, Berlin, 1958. xvi + 2544 pp. 16 × 24 cm. Price DM 224.

The second (1958) supplement to the 1925 edition of the famous compendium *Hagers Practice of Pharmacy* appears in 2 volumes, the first covering the alphabet A–H and the second I–Z. The latter volume contains the index for both.

Hagers Handbuch has been the standard German work on the practice and science of Pharmacy since it was first published in 1876. In many respects it is the European counterpart of *Remington's Practice of Pharmacy*, but the *Handbuch* has been completely revised only twice (1900 and 1925). However, supplementary editions were printed in 1908 and 1944 and now again in 1958.

This new supplementary edition of 1958 is the second since the complete revision of 1925. The earlier editions have passed through several printings, the last in 1949.

The *Handbuch* has long proved itself to be a comprehensive and reliable reference for pharmacists, pharmaceutical manufacturers, physicians, and health officials. Even its older editions are still exceptionally valuable reference works. It covers the chemical composition, actions, methods of preparation, testing, and assay of all important pharmaceutic products with numerous tables, graphs, and references to the world literature. Included are many references to the *National Formulary*, *United States Pharmacopeia*, *United States Dispensatory*, and *New and Nonofficial Drugs*, as well as reference to the FDA and the leading pharmaceutical manufacturers. The theoretical treatments are thorough. For example, nearly 27 pages are devoted to the theory of isotonic solutions, with numerous tables.

The newest editions of foreign pharmacopeias, as well as supplements of the *German Pharmacopeia VI*, were considered so that by the use of Haber protracted literature searches may be avoided in the future. Especially for important publications, many single statements in Hager provide an adequate outline of the literature.

The pharmacological point of view for the most part is considered in the same manner as in the earlier editions. Notes on storage, packaging, and dosage are handled as in the various pharmacopeias. Of special significance are the statements on modern forms of medication and on the new basic materials, as well as methods of pharmaceutical technology. Complete reference for studies with radioisotopes are given.

The research methods have been brought up to the minute and many modern methods, both general and special, such as chromatography, spectrophotometry, micro methods, and water determination are discussed.

Thousands of copies of the *Handbuch* are in continuous use in pharmacies, scientific institutions, and the pharmaceutical industry of Germany and other countries. Every reference library in Pharmacy should have a set of the *Handbuchs*.

The Tobé Lectures in Retail Distribution

Second Series (1957–1958). Harvard University Graduate School of Business Administration, Boston. 168 pp.

The Tobé Lectures were established in 1956 in honor of Mrs. Tobé Coller Davis, fashion and merchandising consultant known professionally as Tobé. These lectures, presented at the Harvard Business School, are aimed at stimulating an increased awareness of the challenge of careers in the retailing field.

The importance of attracting into retail careers more top-level graduates of colleges and graduate schools has been recognized.

Chapters in this volume, presented by a distinguished group of speakers from a wide range of businesses, deal with (1) Merchandising—An Art or a Science?, (2) Evolution Not Revolution: The Present Job of Management in Food Distribution, (3) Areas of Challenge in Retailing, (4) Style Sets a Winning Pace, (5) Retail Management's Toughest Competitor: Self-Imprisonment, (6) Merchandising to a Mass Market, (7) The Importance of the Store Personality, and (8) The Businessman and His City.

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Algesal

Can you help us with a prescription from Turkey for Algesal?—M. S., Washington, D.C.

Algesal is a cream containing 10% diethylamine salicylate. It is marketed in England by E. G. H. Laboratories (see "Extra Pharmacopoeia" 24th ed., vol. I). It is recommended for relief of pain in muscles and joints. The topical use of the diethylamine derivative of salicylic acid is comparable to the use of methyl salicylate.

Alpha-Chymotrypsin

Can you give any information about Alpha Chymotrypsin, which we suspect is being used in clinical trials in thromboembolic disease.—A. J. K., Nebraska.

Alpha-Chymotrypsin is given in *Unlisted Drugs*, **10,** 82b(Sept. 1958), as Chymar-Zon, a product of Armour Chem. Industries Ltd., Sussex (England). According to a notice in *Chemist & Druggist*, **170,** 93(1958), Chymar-Zon is recommended for zonulolysis in ophthalmic surgery.

Chymotrypsin is available as a suspension in sesame oil for intramuscular injection in the treatment of infected leg ulcers due to thrombosis. The oil injection is available under the trade names Chymar injection (Armour Laboratories, Chicago) and Enzeon injection (Breon). Amour Laboratories also markets an aqueous solution of crystalline chymotrypsin in saline under the trade name Chymar aqueous injection.

Benzedrex Inhaler O-t-c

Are restrictions on over-the-counter sales of amphetamine inhalers applicable to SKF's Benzedrex inhaler which replaced their Benzedrine inhaler?—D. D., Virginia.

Benzedrex is propylhexedrine USP. According to NND 1959, "propylhexedrine has only about one-half the pressor effect of amphetamine and produces decidedly less effect on the central nervous system." Its properties are not conducive to its use as an illicit stimulant, and there are no restrictions against its o-t-c sale. Benzedrex inhaler was not a replacement item; its introduction by SKF coincided with their decision to discontinue the amphetamine-containing Benzedrine inhaler.

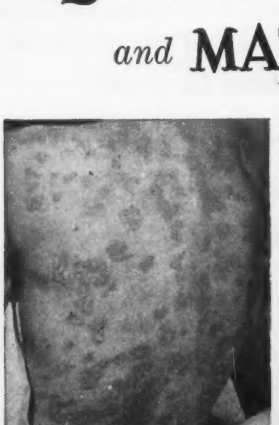
Esidrix and Esidrex

The April issue of the JOURNAL *reports on Esidrix. We have seen Esidrex in the literature. How do they differ?—M. F., Washington, D.C.*

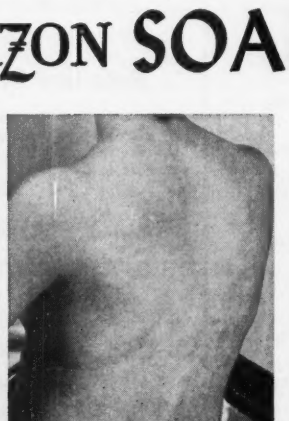
The compounds are chemically identical both being hydrochlorothiazide. Both names are Ciba trade marks: Esidrix in the U.S.; Esidrex in England. Early reports in the U.S., such as the release from the Southern Medical Assoc. meeting Nov. 3, 1958, at New Orleans, referred to Esidrex. This was probably due to the use of the drug that was available abroad before the clinical tests in the U.S. were completed. The Merck Sharp & Dohme trade mark for hydrochorothiazide is HydroDiuril.

Typical case studies convincingly portray the therapeutic action of

MAZON OINTMENT *and* MAZON SOAP



Psoriasis — duration 5 years



After 7 weeks treatment

for ECZEMA PSORIASIS ATHLETE'S FOOT and other skin disorders

MAZON — has the widest sphere of application in the treatment of skin diseases and is comfortingly free from side re-actions.

MAZON — Ointment and Mazon Soap have been highly successful in the treatment of obstinate skin conditions that fail to respond to other preparations.

MAZON — differs radically from all other preparations due to its rapid absorption.

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Physicians have proved to their own satisfaction the unusual effectiveness of Mazon. *We invite you to try the MAZON dual therapy.*

BELMONT LABORATORIES CO., INC.
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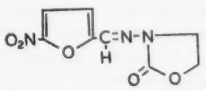
Prescription Practice

New and Nonofficial Drugs

Items Recently Evaluated by the American Medical Association Council on Drugs

Furazolidone

Furoxone (Eaton); 3-(5-Nitro-2-furfurylideneamino)-2-oxazolidinone.



Actions and Uses. Furazolidone, a nitrofuran derivative, shows antibacterial activity *in vitro* against a variety of gram-negative and gram-positive enteric organisms, including species of Salmonella, Shigella, Escherichia, Proteus, Streptococcus, and Staphylococcus. It also shows antiprotozoal activity and has been incorporated in combination with other topical preparations for the treatment of trichomonal infections of the vagina. The precise mechanism of action of furazolidone is not fully understood, but the drug is believed to act by inhibiting dehydrogenase systems of the microbial cell.

Orally administered furazolidone is proposed for the treatment of bacterial diarrheal disorders and enteritis. Its usefulness for the foregoing purposes is based on subjective observations in a relatively small number of cases. Since many bacterial diarrheas are self-limited and of short duration, it is difficult to determine what part in the over-all clinical improvement of the patient might be ascribed to the action of the drug. Nevertheless, it is the clinical impression of observers that furazolidone is useful in the treatment of some patients with acute bacterial gastrointestinal upsets. The drug apparently is capable of arresting some infections due to strains of bacteria which are resistant to the usual antibiotics. Although well-controlled clinical studies are needed to establish its ultimate efficacy, furazolidone shows promise as a chemotherapeutic agent for bacterial enteritis and diarrhea.

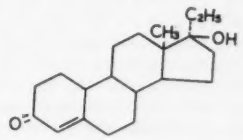
In the clinical trials thus far, nausea and vomiting seem to be the most frequent side-effects to orally administered furazolidone. These symptoms usually subside upon reduction in dosage. In occasional patients, headache has been observed. A few patients have shown sensitization reactions in the form of a vesicular or morbilliform pruritic rash. This has disappeared upon cessation of treatment. Hypochromic anemia has been observed occasionally after long-term therapy but it is not certain whether this effect is due to dietary factors rather than to the drug. Overgrowth of nonsusceptible organisms with resulting colitis, proctitis, anal pruritus, and monilial or staphylococcic enteritis has not been observed. There are no known absolute contraindications to the administration of furazolidone.

Dosage. Furazolidone is administered orally. The usual dose for adults is 100 mg. four times daily. For children five years of age or older, the dose is 50 mg. four times a day. Dosage for children between 1 and 5 years of age is 25 to 33 mg. four times daily. For infants up to one year of age, 8 to 16 mg. is given four times a day. The maximum daily dose for adults and children should not exceed 7.5 mg./Kg. of body weight, given in four divided doses over a period of 24 hrs.

Preparations: suspension (oral) 3.33 mg. per cc.; tablets 100 mg.

Norethandrolone

Nilevar (Searle); 17α-Ethyl-17-hydroxy-19-nor-4-androsten-3-one.



Actions and Uses. Norethandrolone, introduced commercially in 1956, is a synthetic steroid hormone, which is related chemically and pharmacologically to testosterone. The drug exhibits androgenic properties, which are not as pronounced as with testosterone and its esters. Hence, norethandrolone is not used as an androgen. It does, however, exert a significant anabolic effect, which forms the basis for its clinical use. In laboratory experiments and short-term clinical studies, promotion of protein anabolism as evidenced by a reversal of a negative nitrogen balance has been demonstrated; the anabolic potency of the drug is approximately equal to that of testosterone and its esters. Accordingly, norethandrolone has been employed clinically in situations in which problems of protein catabolism are encountered. These include such conditions or circumstances as preparation for and recovery from surgery, recovery from severe illness, recovery from burns and severe trauma, nutritional care in wasting diseases such as carcinomatosis and tuberculosis, domiciliary care of decubitus ulcer in the chronically ill, and care of malnourished children and premature infants. Although the foregoing uses of the drug might logically follow because of its anabolic effect, they are at present considered theoretical. As yet, there is no evidence that a positive nitrogen balance can be maintained for prolonged periods of time, nor is there any direct evidence that, if this were so, such a therapeutic regimen would shorten convalescence, diminish surgical morbidity, or provide any additional benefits which could not be achieved by an adequate diet alone. Thus, although it can be considered logical to employ norethandrolone for the treatment of conditions characterized by a wasting of body protein, further critical research is necessary to substantiate its ultimate utility for this purpose.

In addition to the property of reversal of negative nitrogen balance already described, under certain circumstances, the drug also effects a decreased loss of calcium; this property suggests its employment in certain conditions in which a greater degree of calcium retention is desirable. To the present time there is no evidence that norethandrolone increases bone age or speeds the closure of epiphyses in prepuberal children.

Norethandrolone, although less androgenic than testosterone and its esters, is capable of producing virilizing effects, especially after large doses or prolonged periods of use. For this reason it is contraindicated in patients with prostatic carcinoma. It may also exert progestational activity, causing endometrial proliferation and withdrawal bleeding in adult women. This reaction is more prone to occur if dosage is high or if therapy is terminated abruptly. Nausea and vomiting, which are seldom severe enough to require discontinuance of therapy, have been reported occasionally. Fluid retention and edema can also occur. The drug should therefore be administered cautiously to patients with demonstrable or incipient circulatory or renal failure and should be discontinued at the first sign of fluid retention. It should not be employed in nephrosis or the nephrotic stage of nephritis since it may effect an increased lipemia in such patients. Because norethandrolone alters electrolyte balance, it should not be administered to patients with severe burns or trauma during the acute phase of these conditions.

Norethandrolone may alter liver physiology, probably in a manner similar to methyltestosterone, and a few instances of jaundice have been reported. This manifestation is reversible and may not be evidence of true liver toxicity, although it is an indication for prompt discontinuance of the drug. The alteration of liver physiology may result in abnormal values in serum bilirubin, in serum transaminase, and in sulfobromophthalein determinations. However, in the absence of underlying liver disease, other liver function tests are normal. Continuous administration of norethandrolone for periods longer than three months is considered inadvisable, although a second such course may be initiated after a rest period of one month.

Continued on page 346

New and Nonofficial Drugs

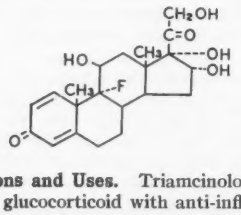
Continued from page 345

Dosage. Norethandrolone is administered orally or intramuscularly. Although dosage is highly variable, the average daily dose for adults usually ranges from 30 to 50 mg. Amounts as high as 100 mg. per day have been administered, but at this dosage level definite androgenic effects are likely to be encountered. For children, 0.5 mg./Kg. of body weight is the usual daily oral dose.

Preparations: solution (injection) 25 mg. in 1 cc.; solution (oral) 8.3 mg. per cc.; tablets 10 mg.

Triamcinolone

Aristocort (Lederle); **Kenacort** (Squibb); 9α-Fluoro-16α-hydroxyprednisolone.



Actions and Uses. Triamcinolone is a potent glucocorticoid with anti-inflammatory, hormonal, and metabolic effects similar to those of prednisolone. It has an anti-inflammatory potency greater than that of an equal amount of prednisolone; i. e., comparable suppressive effects may usually be achieved with lower doses of triamcinolone than with prednisolone. Triamcinolone lacks the sodium-retaining and edema-producing effects of most other glucocorticoids. During the first several days of administration, it may cause a loss of sodium from the body; an initial mild diuretic action is frequently observed, whether the patient is frankly edematous or not. This is in contrast to the definite sodium-retaining and fluid-retaining properties of cortisone and hydrocortisone and to a much lesser extent with prednisone and prednisolone. Except in exceedingly large doses, triamcinolone apparently has no consistent effect on potassium excretion. Hence, neither sodium restriction nor potassium supplementation is ordinarily required during therapy with this agent. As with other glucocorticoids, the long-term administration of triamcinolone results in definite catabolic effects, as indicated by impairment of carbohydrate utilization and negative protein and calcium balance. This catabolic effect, coupled with a lack of appetite stimulation which is apparently peculiar to triamcinolone, may produce weight loss that might be undesirable in some patients treated for long periods of time. However, the voracious appetite, with weight gain and euphoria, characteristic of other steroids, is not seen with administration of triamcinolone.

Triamcinolone has been used for the management of a wide variety of clinical conditions usually considered amenable to systemic steroid therapy. These have included rheumatoid arthritis and other collagen diseases, allergic and dermatological disorders, certain leukemias and malignant lymphomas, the nephrotic syndrome, pulmonary emphysema and fibrosis, acute bursitis, rheumatic fever, and certain blood dyscrasias. Although clinical experience with the drug in some of the foregoing conditions is not extensive, the many similarities in action between triamcinolone and other potent glucocorticoids would indicate a usefulness for triamcinolone akin to that of other agents of this class. There is some evidence that triamcinolone is more effective at a smaller dosage than are other steroids in controlling both the skin and the joint lesions in psoriasis, whether or not complicated by arthropathy. Because it does not exert strong mineralocorticoid effects, triamcinolone is probably not as effective as cortisone or hydrocortisone for the management of acute adrenal insufficiency. Triamcinolone appears to compare favorably with other steroids for use in those situations in which edema and sodium retention have been complicating problems. It may also be the steroid of choice for patients in whom psychic stimulation, euphoria, voracious appetite, and weight gain should be avoided. Like all other hormones of this type, triamcinolone suppresses, but does not cure, the manifestations of the various diseases treated.

Although electrolyte imbalance rarely complicates therapy with traimcinolone, the drug does produce the other side-effects and untoward reactions common to the glucocorticoids. At therapeutically equivalent doses, the frequency and severity of clinical manifestations of hyperadrenalism—rounding of the face, fat deposition, and hirsutism—are essentially the same. Likewise, there is little indication that the relative incidence of osteoporosis is materially decreased after the long-term use of the drug. Triamcinolone apparently does not cause the euphoria sometimes seen with other steroids, and the occurrence of mental depressions is uncommon. Current evidence suggests that the drug may not produce as high an incidence of peptic ulcer as do other steroids. Cutaneous erythema seems to be a side-effect peculiar to triamcinolone. The usual contraindications and precautions of glucocorticoid therapy should be followed in the use of triamcinolone, keeping in mind that prolonged therapy with this drug will suppress the function of the patient's own adrenals by interfering with the pituitary-adrenal axis.

Dosage. Triamcinolone is administered orally. Dosage varies with the condition being treated, its severity, appearance of side-effects, and individual response. For the common diseases amenable to systemic steroid therapy, the usual initial (suppressive) dose for adults ranges from 8 to 20 mg. per day in three or four divided doses. When a satisfactory response is obtained, the initial dose is reduced gradually in decrements of 2 mg. every two or three days until a maintenance dosage level is reached which will adequately maintain the patient's condition. For the treatment of rheumatoid arthritis, the necessity of large initial doses, with subsequent step-wise reduction to maintenance levels, has been questioned by some authorities who favor, instead, the initiation of therapy with doses believed to be the eventual maintenance dose.

Preparations: tablets 1.2 mg. and 4 mg.

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If there is added to the problem of proper sequence in the scientific and professional courses the further requirement of including some instruction in studies which lay the foundations for personal development and community leadership, it was inevitable that those whose obligation was to suggest a solution should arrive at the proposal of a professional curriculum of 4 years based upon an admission requirement of 2 years of study in a college of liberal arts and sciences.

Even the 5-year program which becomes the minimum for all accredited colleges after April 1, 1960 affords numerous improvements over the current minimum curriculum of 4 years. It makes possible better sequence of courses which will result in more effective and more mature teaching. It permits the inclusion of some new courses, the nature of which will depend upon the thinking of the faculty making the change. In a substantial number of colleges the added courses will be from the liberal arts and sciences since they have adequately served the sciences and technology in their present curriculum. Other colleges will include new courses in business or management field since the sciences, technology, and the arts are presently well taught. It is to be expected that the requirement of one or two years of college before entering the professional curriculum will reduce the numbers of students who enter the relatively expensive professional curriculum only to find out that they can not carry college studies successfully. Those who enroll from the pre-professional curriculum may be expected to continue to the completion of the degree work. The 5-year program provides some time for individualized planning of curriculum through a system of electives.

Real benefits can be predicted for the profession of Pharmacy, for the public, for employers, and for holders of degrees earned in the extended programs. The debate over the length of the program is reminiscent of the similar debates which have preceded this one, i.e., when the curriculum then in force was changed from one without laboratory work to the inclusion of laboratory teaching; when the prerequisites were changed from a common school education to one year of High School, and then to graduation from High School; from 2 years of college to 3 years and then to 4. Progress in pharmaceutical education has been slow but it has been made.

It is predictable that the Doctors of Pharmacy who will be in the majority among the practitioners of the year 2000 and beyond will get amusement out of their contemplation of the present debate. It is also predictable that the education of the pharmacists of the twenty-first century will be different from that of the present. ■

Progress in Medicine

5-Fluorouracil in Clinical Cancer Studies

Clinical studies reported by Drs. F. J. Ansfield and A. R. Curreri, *J. Natl. Cancer Inst.*, **22,** 497(1959), indicated that carcinoma of the breast, ovary, large bowel and rectum, and hepatoma appeared sensitive to 5-fluorouracil. The physicians note that while several favorable responses were seen with 5-fluorouracil in carcinoma of the cervix, anaplastic carcinoma (primary unknown), transitional cell carcinoma of the nasopharynx, reticulum-cell sarcoma, and synoviosarcoma, further clinical trial is needed to evaluate effectiveness in these lesions. The drug apparently had no value in carcinoma of the lung, hypernephroma, carcinoma of the stomach and the pancreas, and malignant melanoma. The dosage schedule appeared to influence clinical response, the most promising being 15 mg./Kg./day for 5 days, followed by half doses given on alternate days until the appearance of early toxicity. Maintenance dosage schedule was ineffective and may have been deleterious to the patient. The course of treatment had to be repeated at approximately monthly intervals, but the same dosage schedule of 5-fluorouracil could not be repeated, as a rule, for more than several months; and perhaps the dose should have been slightly reduced. It is noted that 5-fluorouracil is toxic and should be given with extreme caution. No patient has been cured by the drug.

Griseofulvin Orally in Dermatomycoses

Encouraging results in the treatment of 31 patients with dermatomycoses (various types of ringworm) who were given the antibiotic griseofulvin orally, 1–5 Gm. daily, are reported by Dr. H. Blank, *et al.*, *AMA Arch. Dermatol.*, **79,** 259(1959). The clinicians found: "Onychomycosis requires 3-4 months to clear, but new normal nail growth is seen earlier. The optimum duration of therapy is not known. Cultures of epithelial lesions often become negative in one week. Direct KOH examinations may be positive for an additional week or more. Infected nails and hair appear to contain viable fungi until the involved portions are replaced by healthy new growth. Although toxic reactions appear to be minimal in therapeutic doses in man, the animal data indicate that repeated peripheral blood cell counts at least should be performed during a course of prolonged therapy. One patient developed an urticaria-like drug eruption after six weeks of continuous therapy, and others have had mild self-limited complaints of gastrointestinal distress and headache. A daily dose of 1 Gm. seems to be adequate, although the minimum effective dose and the optimum dose have not been established for all types of infection. The duration of treatment required probably will vary, apparently depending on the time required for normal replacement of the infected tissues. Likelihood of relapse or recurrence of infection is not known."

Hydrochlorothiazide—New Saluretic

Clinical experiences with hydrochlorothiazide (6 - chloro - 7 - sulfamyl - 3,-4-dihydro-1,2,4-benzothiadiazine-1, 1-dioxide) are reported by Dr. J. Zatuchni, *et al.*, *Am. J. Med. Sci.*, **237,** 479(1959). They report that hydrochlorothiazide is a potent saluretic drug, well-tolerated orally or intravenously, producing a marked increase in excretion of sodium and chloride. The amount of chloride excreted exceeds that of sodium. Potassium excretion is relatively slightly increased. The amount of diuresis and consequent weight loss depend upon the degree of edema, which may be obvious or latent. Hydrochlorothiazide, like chlorothiazide, is an antihypertensive but not a hypotensive agent, and may produce hyponatremia, hypochloremia, hypokalemia, and hyperuricemia. Their results indicate that the maximal oral dose of hydrochlorothiazide appears to be 200 mg. daily.

Isoniazid and PAS in Tuberculosis

Results of a 2-year study on 280 patients indicate that isoniazid was as effective alone as when given in combination with PAS in previously untreated pulmonary TB patients without lung cavities. Another study on 1,166 pulmonary TB patients who do have lung cavities and were previously untreated indicated that administration of either isoniazid with PAS or isoniazid with streptomycin was as effective as a combination of the 3 drugs, and addition of the third drug to either combination of 2 drugs increased the number of drug reactions. The studies were made at VA-Armed Forces hospitals and the results were released by the Veterans Administration, Mar. 17, 1959.

Methylcellulose—Irritation Studies

Results of studies of methylcellulose in relation to irritation, hypersensitiveness, and its outflow from the anterior chamber of rabbit eyes are reported by T. C. Fleming, *et al.*, *AMA Arch. Ophthalmol.*, **61,** 565(1959). Subcutaneous injections of methylcellulose into albino rabbits were nonirritative over a 28-day period. Tissue-culture studies on human conjunctival and corneal epithelium showed no evidence of inhibition of cellular growth or toxic effects when subjected to a 0.5% solution of methylcellulose. Solutions of methylcellulose did not produce hypersensitivity or anaphylactoid reactions in guinea pigs. Intraocular injections of methylcellulose prepared in a balanced salt solution gave no indications of producing an iridocyclitis, but 0.9% solutions of sodium chloride causeda mild iritis, and injection of methylcellulose combined with sodium chloride produced a mild iridocyclitis. It was, therefore, concluded that the sodium chloride solution rather than the methylcellulose was responsible for the adverse reactions. Qualitative tests indicate that methylcellulose was removed from the anterior chamber by physiologic processes. Microscopic examination, using polarized light, of animal-eye tissue subjected to methylcellulose gave no evidence of a foreign-substance reaction in the tissues.

Novobiocin and Eye Infections

Novobiocin was very effective in the treatment of eye infections caused by Gram-positive organisms but gave poor results when Gram-negative organisms, particularly *Ps. aeruginosa*, caused the infections. These results are reported by T. Suie, *et al.*, *J. Am. Med. Assoc.*, **169,** 580(1959). The report concludes: "In order to minimize development of resistant organisms, use of novobiocin (and other antibiotics suitable for systemic administration) should be restricted to treatment in the more serious eye infections."

Penthienate Methobromide in Lienteric Diarrhea

In a group of children (4–12 yrs.) afflicted with lienteric diarrhea (stools contain undigested food) (12 cases) and fecal incontinence (16 cases), who were treated orally with 5 mg. penthienate methobromide (Monodral) 2–3 times daily after food, 27 of the 28 children obtained partial or complete relief after treatment for at least 2 months, reports Dr. R. A. Miller, *Brit. Med. J.*, **2,** 1394(1958). Eleven of the 12 children with lienteric diarrhea became asymptomatic. The twelfth child recovered on admission to the hospital, although no medication was given. Complete relief

Continued on page 348

was reported in 8 of the 16 patients with fecal and urinary incontinence, and partial relief was noted in the other 8. Dr. Miller comments: "This paper does not describe a scientifically controlled investigation. Neither the methods of diagnosis of the conditions nor those of assessing the results of treatment fulfil the necessary conditions. Nevertheless, from a clinical point of view it is apparent that treatment of lienteric diarrhea and fecal incontinence with penthienate leads to a marked improvement in most cases. The drug appears to be more effective than older methods of treatment, and when used alone or in conjunction with other remedies constitutes a definite advance in the treatment of these conditions."

Phencyclidine (Sernyl) Clinical Trial in Psychoneurosis

Results of treatment of 32 neuropsychiatric patients with phencyclidine (Sernyl, P.-D.), 1-(1-phenylcyclohexyl)-piperidine HCl, are reported by T. Bodi, *et al., Antibiotic Med. and Clin. Therapy,* **6,** 79(1959). The drug was given orally, initially 0.25 mg. 3 times daily for 7 days, then increased to 0.5 mg. 3 times daily, then at intervals of 1–2 wks. increased as indicated by individual response. The best therapeutic and well-tolerated dose of phencyclidine was 1.5 mg. daily in 19 patients, 3 mg. daily in 11 patients, and 4.5 mg. daily in 2 patients. The investigators state: "Phencyclidine, when given to patients with anxiety symptoms, appeared to be most effective in mild to moderately severe reactions. Placebo comparison in 15 patients supported the therapeutic effect of the drug. Psychophysiological reactions pertaining to various organ systems responded well to the therapy. Patients with personality disorders and 2 patients with residual schizophrenic reaction responded poorly. The chief disadvantage of phencyclidine is its extremely narrow therapeutic range. It is possible that various analogues of phencyclidine might easily overcome this problem, and it is thought that further studies are indicated in this direction."

Phenmetrazine HCl Addiction

A case in which addiction causing a subacute delirious state, with auditory hallucinations and visual illusions, merging into the dysmnesic syndrome is attributed to excessive use of phenmetrazine HCl (2-phenyl-3-methyl-tetrahydro-1,4-oxazine HCl; Preludin) is described by Dr. M. Silverman, *Brit. Med. J.*, **1,** 696(1959). The 23-yr. old woman, with an unstable personal and family background, had increased her dosage over 18 months to 20 tablets daily before she was hospitalized. The drug was available without prescription.

Streptomycin Sulfate and Pantothenate

A release by the Veterans Administration, Mar. 31, 1959, states that a study of 237 tuberculosis patients in 13 VA hospitals shows no evidence that use of streptomycin pantothenate rather than streptomycin sulfate reduces hearing impairment and other undesirable effects of streptomycin treatment to any significant extent.

Sulfamethoxypyridazine Reactions in Dermatitis Herpetiformis

Most cases of dermatitis herpetiformis are readily controlled with sulfamethoxypyridazine (Kynex), and Drs. H. O. Perry and R. K. Winkelmann, *J. Am. Med. Assoc.*, **169,** 127(1959), obtained good control in 10 of 20 patients, with therapeutic control of the eruption in most cases with a daily dose of 1 Gm. the first 24 hrs. and a single dose of 0.5 Gm. daily thereafter. Four of the 20 patients showed good response to the drug but then had adverse reactions. The adverse reactions were due to the toxic effect of cumulative dosage and involved principally the hematopoietic and cutaneous organs, including a fixed drug reaction and a photosensitivity. There was no predictability in the relationship between the dose administered and the blood level obtained over long periods; therefore routine blood level determinations should be performed during sulfamethoxypyridazine therapy.

Testosterone in Defective Spermatogenesis

A report on 30 patients with defective spermatogenesis who were treated with the following preparations of testosterone: methyltestosterone sublingually, testosterone propionate in high i.m. dosage for 3 months, testosterone isobutyrate by i.m. injection, or testosterone implants, is given by Drs. A. W. Spence and V. C. Medvei, *Lancet,* **1,** 124(1959). They found that in most cases there was little change in the quality of the semen. The wives of 11 patients became pregnant; the incidence of pregnancy was greatest when husbands were treated with high doses of testosterone propionate for three months (6 out of 13 cases). The sperm-counts of 7 fertile patients ranged from less than 1 million per ml. to 10 million per ml. Of 2 untreated patients who were fertile, one had azoospermia and the other had a sperm-count of 7 million per ml.

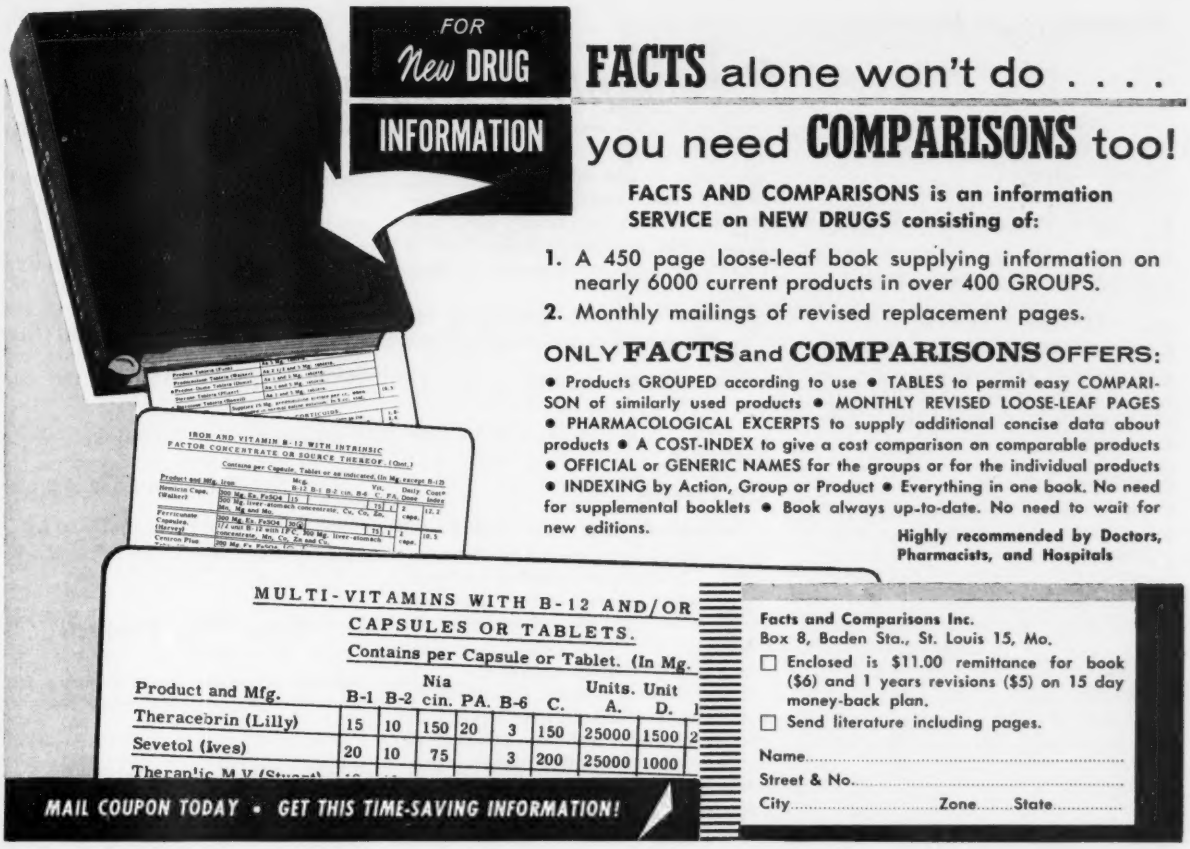
Triamcinolone Reactions

The clinical progress of 47 patients treated with triamcinolone in doses of 4–16 mg. daily for periods up to 11 months is reported by Drs. P. H. Kendall and M. F. Hart, *Brit. Med. J.*, **1,** 682(1959). They note that 24 of the 47 patients experienced serious side-effects, the majority of which resemble those seen following other steroids. Four patients suffered muscle-wasting, the cause of which is not obvious. Of the patients recieving 4–6 mg. daily only 5 showed side-effects, and it is suggested that 6 mg. should be the maximum maintenance dose for prolonged therapy.

Triamcinolone Therapy in Elderly Men

Clinical observations on 31 male patients (35-75 yrs.) who were treated with triamcinolone (Aristocort) are reported by Dr. T. H. McGavack, *et al., Am. J. Med. Sci.*, **236,** 720(1958). They summarize their findings as follows:

"Edema was present in 14 of the men and was secondary to cardiac failure in 6. Triamcinolone produced a significant loss of water, sodium and potassium in the 31 subjects tested during periods varying from 7 to 70 days. These losses were greatest in those who were initially edematous. The edema was not apparently influenced in one person with severe cirrhosis of the liver, nor in a second individual with lymphedema and secondary eczema. In the first days of treatment all subjects lost weight, but in 5 without edema there was later an increase in weight. Urinary 17-ketosteroid excretion was depressed during treatment with triamcinolone. The values for serum sodium, potassium, chloride, and CO_2 combining power were not appreciably altered by the use of triamcinolone. Under treatment with triamcinolone, there was some improvement in appetite in 4 subjects; no recognizable change occurred in the others. Euphoria was observed in one subject; this may have represented an improvement in the previous apathetic state. Blood pressure was not appreciably altered by the use of triamcinolone. In general, dosages between 6 and 12 mg. daily proved to be therapeutically effective in the observed conditions, which included lymphedema, edema due to cardiac failure, arthritis, periarteritis nodosa and psoriasis. No clinically recognizable influence was exerted in patients with 'uncomplicated' generalized arteriosclerosis, chronic hypertrophic pulmonary emphysema without heart failure, Huntington's chorea and hepatic cirrhosis. In fact, the last mentioned condition may have actually been aggravated. Among the undesirable effects of triamcinolone in the present series of cases should be included purpura in 2 subjects; weakness in 2; mooning of the face in one. Upon withdrawal of the drug retention of fluid and probably also of sodium occurred in 3 individuals, one of whom developed acute pulmonary edema."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APhA Women's Auxiliary

Cincinnati Convention

On Sunday afternoon, August 16th, the first Auxiliary Board meeting will be held in the convention hotel, as has been the custom in the past. Monday morning has been completely set aside for committee meetings. They will be scheduled early enough so that members will be able to participate in the entertainment planned for the ladies later in the day. On Tuesday the first general meeting and the brunch will be held, at which time the annual reports will be given. The officers and chairmen have been asked to keep these brief and concise. Discussions of the reports will be withheld until the second general meeting later in the week. It is hoped by so doing all the reports can be heard on Tuesday, thus giving the membership an opportunity to consider them thoroughly before the next meeting. The second Board meeting will be held on Wednesday morning and the final one on Friday. A definite time schedule will appear in the next issue of THE JOURNAL.

It is still not too late to make suggestions regarding these meetings, and we are truly grateful for those we have received. They have a great deal of merit.

Like the officers of every organization, we need help and would be delighted to hear from members who would be willing to give a little time in their own districts and serve on the Membership Committee. There are many members who attend most of the conventions and could do a great deal for the Auxiliary by offering their assistance to Thea Gesoalde, who as Second Vice President is chairman of the Membership Committee. Her address is 233 Schenck Avenue, Great Neck, Long Island, New York.

New Members

It is a pleasure to welcome to the Auxiliary the following new members: Catherine N. Sideri, Sc.D., of the Philadelphia College of Pharmacy & Science and Mrs. Jacob Eisen, president of the WO of the New Jersey Pharmaceutical Association.

Hugh Mercer Apothecary Shop

A donation for the Hugh Mercer Apothecary Shop has been received from the Chi Alumnae of Lambda Kappa Sigma. The Women's Auxiliary joins the Friends of Historical Pharmacy in thanking the alumnae for their generosity in contributing to the maintenance and improvement of the Shop.

Those who are planning their fall programs during the summer lull might be interested in including on their agenda a fund raising social function to assist this project. Everyone is again reminded, if they travel in the East, to visit The Shop in Fredericksburg, Va.

Pharmacy Student Wives Clubs

There will be a meeting of the delegates and members of the PSWC on Monday morning, August 17, in order that they may discuss their programs and problems. It is hoped that every Club will be represented.

Dorothy M. Cusick, President
APhA Women's Auxiliary

New Prescription Products

Anturan Tablets

Description: Each scored tablet contains 100 mg. Anturan (sulfinpyrazone), a uricosuric agent.

Indications: For management of chronic gout by maintenance of serum uric acid levels within normal limits.

Administration: According to the requirements of the patient.

Form Supplied: Bottles of 100 tablets.

Source: Geigy Pharmaceuticals, Yonkers, N.Y.

Neptazane Tablets

Description: Each scored tablet contains 50 mg. Neptazane (methazolamide), a carbonic anhydrase inhibitor; chemically, 5-acetylimino-4-methyl-Δ^2-1,3,4-thiadiazoline-2-sulfonamide.

Indications: Acute and chronic glaucoma. Effective in some cases not relieved by Diamox (acetazolamide).

Administration: 1–2 tablets 2–3 times daily.

Form Supplied: Bottles of 100.

Source: Lederle Laboratories, Pearl River, N.Y.

Pheny-PAS-Tebamin Powder
Pheny-PAS-Tebamin Tablets

Description: Pheny-PAS-Tebamin (phenyl ester of *p*-aminosalicylic acid) is marketed as a chocolate-flavored powder for suspension in water or milk and as 500-mg. tablets.

Indications: Same as for PAS in conjunction with isoniazid or streptomycin in TB; 1 Gm. corresponds to 0.67 Gm. PAS. Pheny-PAS-Tebamin is claimed to avoid gastrointestinal disturbances, and liberates PAS after absorption.

Administration: Orally, 1 teaspoonful of powder (4 Gm. phenyl *p*-aminosalicylate) or 8 tablets 3 times daily with meals.

Form Supplied: Powder in 1-lb. containers; Tablets in bottles of 500.

Source: Purdue Frederick Co., New York.

Rautrax Tablets

Description: Each capsule-shaped tablet contains 400 mg. flumethiazide (new diuretic, comparable to its chloro homologue chlorothiazide), 50 mg. Raudixin (*Rauwolfia serpentina* root), and 400 mg. potassium chloride.

Indications: To provide antihypertensive, diuretic, and saluretic (promotes loss of sodium and chloride) effects, particularly when there is insufficient response to a single hypotensive agent and when partial or complete replacement of potentially more toxic agents is desirable.

Administration: As directed by the physician according to the needs of the patient.

Form Supplied: Bottles of 100 tablets.

Source: E. R. Squibb & Sons, New York 22, N.Y.

Soma Tablets

Description: Each white, coated tablet contains 350 mg. carisoprodol, chemically N-isopropyl-2-methyl-2-propyl-1,3-propanediol dicarbamate. The compound differs from meprobamate by replacement of a hydrogen in a $—NH_2$ group with an isopropyl group.

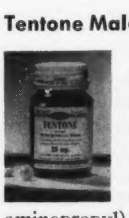
Indications: For acute inflammatory traumatic and degenerative conditions affecting muscles and joints, including lumbosacral and sacroiliac strain; whiplash injuries; wry neck, bursitis, postoperative muscle pain; and inflammations of muscle and tendon sheaths.

Administration: Orally, 1 tablet 3 times a day and at bedtime.

Form Supplied: Bottles of 50.

Source: Wallace Laboratories, New Brunswick, N.J.

Tentone Maleate Tablets



Description: Each coated, "LL and weight" marked tablet contains 10, 25, or 50 mg. Tentone (methoxypromazine) maleate; chemically, 2-methoxy - 10 - (3′ - dimethylaminopropyl) phenothiazine maleate.

Indications: For use as a tranquilizer in the control of psychic conditions which require more than a mild sedative but do not involve psychopathology.

Administration: Orally, initially 10–500 mg. daily; maintenance, 30 mg. to 1.5 Gm. daily.

Form Supplied: All sizes in bottles of 100 and 1,000 tablets.

Source: Lederle Laboratories, Pearl River, N.Y.

Tigan Hydrochloride Capsules

Description: Each blue and white capsule contains 100 mg. Tigan HCl, chemically 4-(2-dimethylaminoethoxy)-N - (3,4,5 - trimethoxybenzoyl)benzylamine HCl.

Indications: For prevention and control of nausea and vomiting, by specific action through the medulla on the vomiting center. It is claimed that Tigan does not produce sedation, excitation, hypotension, or any other side effects.

Administration: 1–2 capsules every 4 hrs.

Form Supplied: Bottles of 100 and 500.

Source: Roche Laboratories, Nutley, N.J.

Other New Products

Chemicals, clinical trial drugs, diagnostic aids, equipment for the retail and hospital pharmacy

Alpha-Keri Oil

A green, scented liquid containing Kerohydric (a dewaxed lanolin fraction), mineral oil, and a nonionic emulsifier is marketed by *Westwood Pharm.* as an aid in the treatment of dry skin, pruritis, and mild skin irritations. For a tub bath use 1–2 tablespoonfuls and soak for 5–20 minutes. Supplied in 8-oz. bottles.

Anectine Flo-Pack

Plastic bottles containing 500 mg. or 1 Gm. of Anectine (succinylcholine chloride) as a sterile powder for use in the preparation of i.v. infusions for producing full skeletal muscle relaxation are marketed by *Burroughs Wellcome.* The powder retains its potency indefinitely. The Flo-Pack unit can be used with vacuum or nonvacuum bottles and does not require separate needles or syringes.

Corphos Ophthalmic Solution

An ophthalmic solution containing 0.5% hydrocortisone-21-phosphate is marketed by *Crookes-Barnes Labs.* for topical steroid therapy. Dosage, 1–2 drops every 2 hrs. in conjunctival sac. Supplied in 2.5-cc. dropper bottles.

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All actively promoted items on which information has been received in the past thirty days are reported here. Manufacturers are urged to send details of their new products as early as possible, so that pharmacists through these pages will have full information before products are detailed to the physician. For inclusion in this department, for which there is no charge, send descriptive literature to the Editor, New Prescription Products Department; JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Avenue, N.W., Washington 7, D.C.

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Creamalin Tablets Improved

The new form of Creamalin tablets marketed by *Winthrop Labs.* is soft, chewable, and mint-flavored, and contains, in each: 320 mg. dried aluminum hydroxide gel (polymerized with a cationic carboxy group for each group averaging less than 8 $Al(OH)_3$ units, and complexed with hexitol) and 75 mg. magnesium hydroxide. Dosage: for gastric hyperacidity, 2–4 tablets; for peptic ulcer or gastritis, 2–4 tablets every 2–4 hours. Tablets may be chewed, swallowed with liquid, or dissolved in the mouth. Supplied in bottles of 50, 100, 200, and 1,000. [See THIS JOURNAL. **20,** 226-227 (April 1959).]

Florinef Ophthalmic Solution

An ophthalmic solution containing fludrocortisone hemisuccinate is marketed by *E. R. Squibb & Sons.* It is claimed to give prompt relief of itching, smarting, or inflamed lesions of the eye without causing irritation or blurring vision. Dosage is 1–2 drops into conjunctival sac 2–4 times daily. Supplied in 2.5-cc. bottles.

Hypaque Sodium 20% and 50% Hypaque-M 90%

Winthrop Laboratories markets Hypaque (diatrizoate) sodium in 50% solution (30-cc. ampuls with 1-cc. test ampul and 20- and 30-cc. vials) for excretory urography; 20% solution (100-cc. bottles) for retrograde pyelography; and as Hypaque-M 90% solution, which contains in each cc. a mixture of 0.3 Gm. (30%) Hypaque sodium and 0.6 Gm. (60%) *n*-methylglucamine salt of 3 5-diacetamido-2,4,6-triiodobenzoic acid, with edathamil calcium-disodium as stabilizer, intended primarily for nephrotomography and for cardiac and pulmonary visualization. Hypaque-M 90% should not be used for routine excretory urography. It is supplied in 20-cc. and 50-cc. vials.

Nalertan Tabules

Prolonged action Tabules containing, in each: chlorpheniramine tannate, 8 mg.; pyrilamine tannate, 25 mg.; and Tanphetamin (*d*-amphetamine tannate), 10 mg., are marketed by *Irwin, Neisler & Co.* for use in the management of allergy. Dosage is 1–2 Tabules twice daily. Supplied in bottles of 100 and 500.

Neo-Pent Tablets

Tablets containing, in each: pentylenetetrazole, 100 mg.; nicotinic acid, 50 mg.; and Neothylline (dihydroxypropyl theophylline), 100 mg., are marketed by *Paul Maney Labs.* for use in the treatment of aged patients who are confused, depressed, and fatigued, and who may also have cardiovascular impairment. Dosage is 1 tablet 3 times daily. Supplied in bottles of 100 and 1,000.

Thermagel Emulsion

An emulsion containing benzalkonium chloride 1%, ethyl aminobenzoate 1%, camphor 3%, methyl salicylate 1.5%, menthol 1.5%, isopropyl alcohol 4%, in nonionic petrolatum emulsion base is marketed by *Bruce Parenterals* for topical application for minor muscular pains. Can be diluted 1:10 for use as a wet dressing 2–3 times daily as directed by a physician. Supplied in pints, gallons, and 2-oz. plastic bottles.

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APhA Comment on Warning Statements for Drug Labels

Continued from page 336

(a) It is recommended that dispensing of these drugs be restricted to prescriptions.
(b) It is suggested that if dispensing of these drugs is not restricted to prescriptions the "caution" should include a statement to read "not for prolonged use" (because of imbalance in normal microbial flora which results from continued use).
Antihistaminics for external use
It is recommended that dispensing of these drugs be restricted to prescriptions.
Antihistaminics, oral
It is recommended that dispensing of these drugs be restricted to prescriptions.
Antipyrine
It is recommended that dispensing of this drug be restricted to prescriptions.
Arsenic preparations
(a) It is recommended that dispensing of these drugs be restricted to prescriptions.
(b) It is suggested that if dispensing of these drugs is not restricted to prescriptions that the warning under 131.9 be included.
Belladonna preparations and preparations of its alkaloids [atropine, hyoscyamine, and scopolamine (hyoscine)]; hyoscyamus, stramonium, and related drug preparations.
It is recommended that dispensing of these drugs be restricted to prescriptions.
Bromides
It is recommended that dispensing of these drugs be restricted to prescriptions.
Carbolic acid (phenol) preparations for external use
(a) It is recommended that dispensing of these drugs be restricted to prescriptions.
(b) It is suggested that if dispensing of these drugs is not restricted to prescriptions that the warning under 131.9 be included.
Cobalt preparations
It is recommended that dispensing of these drugs be restricted to prescriptions.
Counterirritants and rubefacients
(a) It is suggested that this warning be made to read "for the temporary relief of . . . . If symptoms persist, consult physician."
(b) It is suggested that the cautionary statement include "burns" and "sunburn."
Ephedrine preparations, oral
It is recommended that dispensing of these drugs be restricted to prescriptions.
Epinephrine inhalation
It is suggested that such terms as "precipitate," "turbidity," "viscous," which are used under epinephrine inhalation, insulin, and other items, are not understood by laymen in their technical connotation. Such words as "cloudiness" or "sediment" or "sticky" would be more readily understood.
Gentian violet tablets
It is recommended that dispensing of this drug be restricted to prescriptions.
Mineral oil laxatives
It is suggested that the statement "do not use to replace edible oils in the preparation of food" be included since there is evidence that such misuse has occurred.
Addition
It is suggested that labels of Iron (Ferrous Sulphate) preparations be required to carry the warning under 131.9.

131.16 Drugs for human use; warning and caution statements required by regulations
Acetaminophen
(a) It is recommended that dispensing of this drug be restricted to prescriptions.
(b) It is suggested that the word "condition" under the "caution" be changed to read "conditions."
Antibiotic-containing drugs for external use for prevention of infection
Antihistaminics, oral
Bacitracin-containing ointments
Bacitracin polymyxin ointment; bacitracin-polymyxin-neomycin ointment
"Cough-due-to-cold" preparations
Dextromethorphan hydrobromide preparations
Diamthazole dihydrochloride for external use
Dicyclomine hydrochloride with an antacid
Diphemanil methylsulfate for external use
Dyclonine hydrochloride
Hexadenol
Insulin
Isoamylhydrocupreine and *zolamine hydrochloride* rectal preparations for external use
Neomycin sulfate with a vasoconstrictor
Oxytetracycline and *polymyxin B sulfate*
Pramoxine hydrochloride for external use
Sodium gentisate
Tuaminoheptane sulfate nasal preparations
Vibesate preparations
It is recommended that dispensing of the foregoing drugs be restricted to prescriptions.

Subpart D—*Devices*

131.25 Devices; recommended warning and caution statements
Ultraviolet generators
It is suggested that a caution should be added to avoid use when drowsy since cases are known when injury was inflicted because of persons falling asleep while under a sun lamp. Also a caution to the effect that "serious burns may be caused by exposure in excess of recommended time or reduction in distance."

The foregoing views and summary of suggestions received from members of the AMERICAN PHARMACEUTICAL ASSOCIATION may be supplemented as further comment is received from the membership.

Respectfully submitted,
Robert P. Fischelis, Secretary
AMERICAN PHARMACEUTICAL ASSOCIATION

Support For Continuing Education

On May 26, 1959 the Subcommittee on Special Education of the Committee on Labor and Education began hearings on H.R. 357. This bill and companion bill S. 648 provide for modest Federal support of the general extension activities of the land-grant colleges and state universities of the United States.

At the 1957 annual meeting in Detroit, the American Association of Colleges of Pharmacy sponsored a special meeting of those interested in continuing education. The meeting revealed that while several states had been able to initiate programs along the lines recommended in the *Pharmaceutical Survey*, the lack of "risk capital" available for general extension activities to develop or expand was impeding the desired development of pharmacy extension services in most states.

In keeping with its objective of helping to provide a system of education and training, calculated to produce competent personnel for all phases of the practice of pharmacy and the training of pharmacists as a means of providing the greatest protection for the public at large, the AMERICAN PHARMACEUTICAL ASSOCIATION has accepted an invitation to testify for H.R. 357 and S. 648. The Association believes that the passage of these bills will materially assist in the development of a necessary extension program in Pharmacy which has been faltering for the lack of dollar nourishment.—W.S.A.

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